

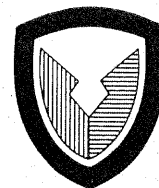
TECHNICAL REPORT
NATICK/TR-82/013

SUMMARY OF OPERATIONAL RATIONS

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JUNE 1982

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This study was conducted to provide baseline data (acceptance, nutrition, stability, utility, weight and cube data, heating and water requirements) on past and existing military operational rations/foods to assist in systems analyses for development of new ration concepts to meet future Marine Corps requirements. Operational rations include: general operational rations, special operational subsistence, survival subsistence and ration supplements. Information provided for each ration includes components, requirements for preparation, shelf life, weight and cube information, as well as advantages and disadvantages.		

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PREFACE

This study was conducted to provide baseline data (acceptance, nutrition, stability, utility, weight and cube data, heating and water requirements) on past and existing military operational rations/foods to assist in systems analyses for development of new ration concepts to meet future Marine Corps requirements. The Field Ration A, based primarily on perishable foods, is not a part of this review.

This effort was undertaken in support of the Marine Corps Requirement M 79-4, Systems Analysis to Define the Required Types of Rations Needed to Support Amphibious Operations; for which Mr. Paul M. Short, Operations Research Systems Analysis Office (ORSAO) is the Project Officer. Mrs. Vera C. Mason was the Project Officer for the Food Engineering Laboratory (FEL) work unit established to support M 79-4, Food Technology Ration Evaluation (Project 1L162724AH99AA, 23125004093).

The format in which information is presented follows an outline which the ORSAO developed in order to standardize entries and facilitate computerization of specific data.

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SUMMARY OF OPERATIONAL RATIONS

INTRODUCTION

This review summarizes information on current, developmental, and selected past operational rations, essentially as a baseline for planning and developing rations for the future. More detailed information, particularly on the history of operational rations, is already available in other publications and is not repeated herein.^{1,2,3,4}

In the text which follows the term *ration* is used — either specifically to denote food for one person for one day or generally to refer to a ration, meal, food packet, or supplement. An *operational ration* denotes this food allowance as constrained by the tactical and logistical characteristics of the military conditions under which the ration is to be used; for example, the size of the group to be subsisted (large group, small group, individual), nature of the military operation, availability of foodservice equipment and personnel and their ability to function, and resupply capability. A *packaged operational ration* is a factory-assembled daily allowance of food; and a *packaged meal* provides one-third of this allowance for a given number of persons. A *food packet* is an assemblage of food for persons in operational or related exigencies (resupply not planned or established) precluding provision of the daily food allowance or even balanced increments thereof. Thus — although a food packet is designed to maximize nutritional value as appropriate to its constraints — weight, volume, and other utility considerations are paramount in order to provide any subsistence at all; one or more food packets do not necessarily constitute a meal or ration. A *supplement* is intended for use in conjunction with a ration or meal and, where feasible, a food packet.

The operational conditions of use, as well as anticipated logistical constraints, ultimately dictate the specific characteristics essential to any ration. These reflect, to varying degrees, four attributes: nutritional adequacy, acceptability, military utility, and stability.

¹R. A. Isker, J. P. Samuels, R. P. McDevitt, M. C. Bollman, W. Maclinn, L. M. Richardson, and L. G. Voss, A report of wartime problems in subsistence research and development — Volume XII: Ration development. H. A. Conway and A. I. Meyer, eds., Operation Studies Number One, Quartermaster Food & Container Institute for the Armed Forces, Chicago, 1947.

²F. A. Koehler, Special rations for the armed forces, QMC Historical Studies Series II, No. 6. (1946–53). Office of the Quartermaster General (Washington, DC), 1958.

³W. Porges, The Subsistence Research Laboratory, CQMD Historical Studies, Report No. 1. Chicago Quartermaster Depot, 1943.

⁴H. W. Thatcher, The development of special rations for the Army, QMC Historical Studies, No. 6, Office of the Quartermaster General (Washington, DC), 1944.

Nutritional adequacy. The primary purpose of military subsistence is to maintain the health and effectiveness of the persons subsisted. The Surgeons General of the Military Departments have established standards toward that end. The standards service in the joint regulation, AR 40-25/BUMEDINST 10110.3E/AFR 160-95, are based on the National Academy of Sciences/National Research Council Recommended Dietary Allowances (RDAs), with adjustments to meet the needs of military personnel.^{5,6} The standards prescribed in the regulation for calories, protein, fat, calcium, iron, thiamin, riboflavin, niacin, ascorbic acid, and vitamin A are not amounts necessarily required by an individual but are goals at which to aim in meeting nutritional needs of groups or individuals. The Surgeons General have issued certain precautionary statements with these standards. Those most germane to packaged ration development are:

(a) Losses of nutrients in processing and preparation should be considered. To meet the nutritional standard and replace essential nutrients destroyed during processing and long, adverse storage, stable carriers have been developed towards assuring adequacy at the time of consumption. The Meal, Ready-to-Eat, Individual, for example, relies not only on fortification of instant coffee with ascorbic acid; of cocoa beverage powder and enriched sweet chocolate with vitamin A, ascorbic acid, thiamin and pyridoxine; of crackers with thiamin, riboflavin, niacin and pyridoxine; of peanut butter with vitamin A, ascorbic acid and thiamin (as did its predecessor, the Meal, Combat, Individual); but also on fortification of cheese spread and of coatings for brownies and cookies with vitamin A, ascorbic acid, thiamin and pyridoxine; and of crackers with calcium carbonate.

(b) To insure that possibly unrecognized nutrient needs are met, the nutrients should be provided from as varied a selection of foods as is practicable.

Unless otherwise indicated, all rations in the following text met the nutritional standards prevailing at the time of their adoption. As noted above, food packets are by definition excepted from this standard although they too must be approved by the appropriate Surgeon General. Nutritional adequacy for a food packet, designed for use with limited water by a survivor of a disaster from which he must await rescue, other food, or death, obviously will differ from that of an operational ration or meal. Nutritional content sufficient to give that survivor at least some capability to extricate himself differs again; and nutritional adequacy for a person entering a military operation (for example, assault, long range patrol) which precludes planned resupply is still different. For the last situation, U.S. policy has been to rely on factory assembled food packets rather than living off the land, which may not offer livelihood or the attempt to find it could jeopardize the operation.

⁵Joint Service Regulation: AR 40-25, Nutritional standards [BUMEDINST 10110.3E, AFR 160-95], Departments of the Army, Navy, and Air Force, Washington, DC, 30 August 1976.

⁶Recommended Dietary Allowances, Ninth Edition 1980, National Academy of Sciences, Washington, DC, 1980.

Acceptability. As the foregoing has implied, nutrients are of no value unless consumed. It is not necessarily true that a person will eat anything if he gets hungry enough. Even if it were, this approach is unlikely to produce good morale and effective troops. World War II experience led the Army Surgeon General to caution against prolonged subsistence on the processed foods then available because of their eventual monotony, with resultant depression of appetite and "apathy" induced in their consumers.⁷

Although characterization of the problems of acceptability as twofold — in the food and in the consumer — may be a gross oversimplification, it is helpful in clarifying some of the problems implicit in this attribute.

(a) **Food.** The properties that make food desirable to eat — flavor, texture, odor, color and appearance — are sensory. Processing, beyond initial cooking, cannot be expected to improve these characteristics. At best, foods subjected to processing and preservation procedures, to enable them to withstand long-term storage, can be expected to have the character of leftovers. A main goal of food processing and preservation technology is to provide efficient, practicable preservation techniques which do minimal damage to initial food properties. A main goal of ration development is to provide components which intensify, within available technology, desirable initial characteristics in the finished product and which can be demonstrated, through laboratory and field tests, to be acceptable to troops — notwithstanding the other essential attributes of long shelf life and utility which the components must also meet.

(b) **Consumers.** The people who comprise our military forces will generally have formed their food habits, including their likes and dislikes, before entering the Service. Ration developers have to take into account strong individual differences and changes in preferences toward foods and seek compromise solutions appropriate to prevailing circumstances. They must also consider that attitudes toward institutional foods will at least in part reflect attitudes towards the institutions themselves, and that food is often a favorite target under institutional conditions. Packaged operational rations, especially, offer no opportunity for free choice. They can invite boredom if used for extended periods, and discontent where a better diet could obviously be made available. When used under the conditions intended, they must appeal to persons under extreme physical and emotional stress, to whom food may be the only break from the unpleasantness, discomfort, and monotony of fighting.

Acceptability presents a major challenge to ration design. The capability of achieving it continues to challenge food science and technology.

Military Utility. A ration which cannot be used will at best hamper the operation and the persons trying to conduct it. The criterion of utility affects all other attributes and ultimately dictates the form in which they finally appear. In general, all rations should be economical of weight and space in transportation and storage, of facilities and labor in unloading,

⁷TB MED 141, Nutritional value and characteristics of operational rations, certain ration supplement, meals, and food packets, Department of the Army, 1 October 1944 and 4 March 1971.

handling, issue, and preparation, and, where applicable, easy for the individual consumer to carry and eat. For some uses, as in non-resupply operations, economy of weight and space is paramount and challenges technology. Although the concept of a pill in the heel of a boot which turns into a freshly broiled steak or hamburger with the addition of water is a fantasy, ongoing effort is taking significant steps towards radically reducing food volume as well as weight, yet permitting reconstitution into familiar foods.

Stability. Past experience has shown that operational rations must travel long distances, be exposed to wide temperature and humidity ranges, be handled roughly, and be stored where facilities are inadequate or where none exist. Some rations are carried in holds of ships or in life-saving equipment aboard aircraft, where temperatures can be extremely high. Unless the rations retain the properties that make them suitable and desirable for consumption, they will be useless. Our national posture is a defensive one, requiring readiness to counter aggression wherever it occurs. This entails stockpiling for contingencies, another primary challenge to operational rations, as even preserved foods are only semipermanent and deteriorate with time and temperature. Past emergencies have demonstrated both the economic waste and threat to preparedness of deteriorated, unserviceable supplies. Fielding of a ration today entails capability of predicting its keeping quality under given time and temperature conditions. DoD Regulation 4145.19-R-1, Storage and Materials Handling, requires prediction therein of optimum shelf life at 4°, 21°, and 32°C (40°, 70°, and 90°F).⁸ DoD Instruction 4140.27, Identification, Control, and Utilization of Shelf-Life Items, requires ability to: (a) predict the first date after manufacture at which stored rations must be opened to determine whether they should be issued, destroyed, or extended to another inspection period; and (b) provide criteria for making these serviceability judgments.⁹

Even in the laboratory these challenges are difficult to meet, but far easier than in real life. Scale-up to volume production and continuing procurement on a competitive basis, within national resources and without sacrifice of the ration's essential characteristics, are major and recurring hurdles. Unless they are overcome, in a universe where variables cannot be controlled as they are in a laboratory, the ration will be at best an academic curiosity, with perhaps some aspects of knowledge or art extended as a result of its development for application to another, more workable item. There may be irony in the recognition that products developed initially for specific military purposes cannot be obtained for these purposes unless they also prove to have some application in the commercial marketplace. Otherwise the nation could not afford them.

Operational rations thus reflect compromises throughout their life cycles, but their essential characteristics cannot be compromised if the nation is to remain prepared. That the compromises thus far have been largely successful is suggested both by the multiplicity of commercial food products whose origins were driven by military exigencies, and by the data summarized in this review.

⁸DoD Regulation 4145.19-R-1, Storage and materials handling, Department of the Army, 15 September 1979.

⁹DoD Instruction 4140.27, Identification, control, and utilization of shelf-life items, Department of Defense, 12 May 1980.

GENERAL OPERATIONAL RATIONS

Current

Standard B Ration

Meal, Combat, Individual

Meal, Ready-to-Eat, Individual

Historical

Ration, Individual, Combat

K Ration

Ration, Small Detachment, 5 Persons

Meal, Landing Force, 25 Persons

Meal, Uncooked, 25-Man*

Meal, Quick-Serve, 6-Man*

Small Unit Meal

Future

T Ration (Tray Pack)

*Prototypes only; did not advance to supply status.

STANDARD B RATION

DATE AVAILABLE FOR TROOP ISSUE: Continuing

NSN: Established for each component item and listed in the following:

Standard B Ration
(Army, Marine Corps, Navy)

SB 10-495
NAV SUP Pub 274
MCO P10110.25C
(Air Force)
AFR 146-8

Hospital B Ration
(Army, Marine Corps, Navy)

SB 10-495-1
NAV SUP Pub 436
MCO P10110.26A
(Air Force)
AFR 166-4

SB 10-495-2
Lists the B ration
components which are
stocked as In-Place
Reserves

DESIGNED:

The Standard B Ration is planned for subsisting members of the Armed Forces during operations that permit organized dining facilities, but preclude use of perishable food supplies. It is used for mass feeding in areas where kitchen facilities, with the exception of refrigeration, are available. At such times as this ration is used in operations where perishable supplies are available, every effort should be made to substitute with the perishable counterparts at the earliest possible time. As the B Ration is supplied in bulk (as line items) and utilized in accordance with planned menus, it is designed to facilitate such substitution on a line-item basis.

The Hospital B Ration is planned for subsisting military personnel who are patients in military hospitals during operations in which the Standard B Ration is issued. For planning purposes it is assumed that 70 percent of the total hospital patient strength will be subsisted on the Standard B Ration. The remaining 30 percent of the hospital patient strength will require modified diets. Approximately one-half of these patients, those requiring foods of solid or semi-solid consistency, will be subsisted on the Hospital B Ration. The remainder will require foods of liquid consistency and will be subsisted on the Hospital Liquid B Ration.

As Air Force mission requirements for use of the Band Hospital B rations differ from those of the other Services, these rations are prescribed in the separate publications identified above.

USED BY: B Ration components are used by all Military Services.

RATION CONSISTS OF:

Approximately 100 so-called nonperishable items, mainly canned and dehydrated, which are supplied in bulk.

Types of Components:

All types of "nonperishable" foods. Alternative menu items are provided to meet specific service needs — canned alternatives for dehydrated meats, fruits, and vegetables. Alternative package sizes are also provided.

Calories: Approximately 4000. Requirements for nutritional modifications, when indicated, will be prescribed by the appropriate commander acting upon the recommendations of medical authority.

STANDARD B RATION

SHELF LIFE (various conditions):

Shelf life varies depending on components.

SUSCEPTIBLE TO DAMAGE BY: Various conditions (e.g. freezing, heating, insects/rodents, humidity, puncture, breakage, etc.) depending on components.

RATION CHARACTERISTICS: (1982 data)

Total weight and cubage include all regular menu components, bread ingredients, condiments and seasoning. For typical menus see SB 10-495 and SB 10-495-1. These data are not applicable to AFR 146-8 and AFR 166-4.

Net weight/ration:	3.0857	pounds
Gross weight/ration:	3.639	pounds
Gross cube/ration:	0.1173	cubic feet

TYPE PACKAGING: Components are packaged in various sizes of cans, cartons, pouches, envelopes, and bags.

COMMENTS:

Accessory foods, condiments, and between meal supplements are included. SB 10-495 is currently being revised to include menu changes and new recipes. Standard B Hospital Ration (SB 10-495-1) is published as a separate document which is also being revised.

Several attempts have been made during the post-World War II period to "unitize" or "modularize" the B Ration. This was done so that a complete ration may be stocked and thus available in early days of an emergency, when long lead items must be matched with vendor-supplied items in order to provide a balanced ration. Largely because of the widely ranging shelf lives of the different components involved, all such attempts have failed the tests of economics and logistical feasibility.

To facilitate procurement, commercially marketed can sizes are utilized for many components. The resultant non-standardization of can sizes and/or number of portions per can also compound problems of unitizing on a meal or ration basis.

STANDARD B RATION

NUMBER OF MENUS:

Presently there is a 10-day menu cycle (SB 10-495). Menus for special diets are included in SB 10-495-1.

PRESENT STATUS:

Components are available through the Defense Logistics Agency. Requisitions will be made in accordance with existing supply procedures of each military service concerned.

PREPARED BY:

Military cooks:

Two to three hours preparation time is required for two cooks to prepare a meal for 100 persons; additional personnel are required for serving and clean-up.



STANDARD B RATION 100 PERSONS/ONE DAY

REQUIREMENTS FOR PREPARATION:

Water:

Sixty-four to 86 (75 average) gallons are required to prepare food for 100 persons for one day. This includes water for beverages included on the menu but not for bread, drinking water or water for sanitation.

Equipment:

Authorized field kitchen and food preparation equipment (field range M-1959, burner M-2 and accessory outfit).

STANDARD B RATION

ADVANTAGES:

The menus and recipes are for guidance only and may be changed to meet the needs of the service.

Intake of the level of nutrients provided by this ration will maintain health and operational efficiency of active men in all climates. This ration is capable of being fed for long periods of time because it is a balanced ration. There is also a variety of menus.

All processed foods can be expected to become monotonous with continuous, unrelieved consumption. The B Ration is unique because it permits substitution with perishables on a line-item basis.



STANDARD B RATION

DISADVANTAGES:

Meals cannot be prepared without trained cooks, and time is required for assembly of rations as all items are packaged separately.

STANDARD B RATION

COMPONENTS: Representative components of the B Ration include:

- Canned meats, poultry, and fish
- Canned bakery mixes
- Cereal
- Cereal products
- Canned fruits and jams
- Canned vegetables and legumes
- Dehydrated fruits, vegetables, fruit juices, and soups
- Dehydrated meats, poultry, and fish
- Nonfat dry milk
- Dehydrated egg mix, cheese, and ice cream mix
- Staples such as flour, sugar, rice, macaroni, and shortening
- Instant puddings
- Salt, pepper, and other spices

MEAL, COMBAT, INDIVIDUAL

ABBREVIATION: MCI

DATE AVAILABLE FOR TROOP ISSUE:

First supply procurement began in 1961; not issued until Ration, Individual, Combat stocks depleted.

TYPE—CLASSIFIED (date): 1958

NSN: 8970-00-577-4513

SPECIFICATION: MIL-M-35048

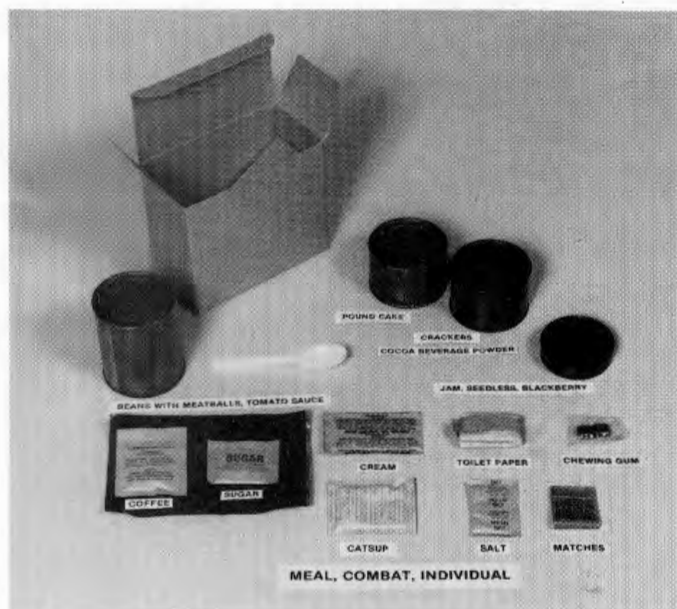
DESIGNED:

For issue as the tactical situation dictates, either in individual units as a meal or in multiples of three as a complete ration. The MCI was the first ration adopted to meet the new subsistence concept of supplying nutritionally balanced meals rather than rations.

RATION/MEAL CONSISTS OF:

Types of Components: Each menu provides one canned meat item; one canned fruit or cake; one B unit (containing crackers and a cocoa beverage or candy); a canned spread; an accessory packet (includes coffee, cream substitute, sugar, salt and chewing gum, along with matches and toilet paper); and a plastic spoon. Each shipping case of 12 menus contains four can openers.

Calories: 1200 average (15% from protein, 39% from fat, and 46% from carbohydrate).



MEAL, COMBAT, INDIVIDUAL

NUMBER OF MENUS: 12

PRESENT STATUS:

This ration is requisitioned from Defense Personnel Support Center, Philadelphia, PA 19101. Present stocks will be issued until depleted and then the Meal, Ready-to-Eat, Individual will be used.

PREPARED BY: The individual consumer

REQUIREMENTS FOR PREPARATION:

Water: Eight ounces per meal for coffee and six additional ounces for four meals (one-third of the menus) for cocoa.

Equipment: All equipment required for preparation and consumption is furnished with the meal except for a heating device (fuel tablet) which must be separately provided.

ADVANTAGES:

This ration is suitable for global use. It requires no special preparation and can be prepared by the individual. Meals are nutritionally balanced and any combination of three meals constitutes a ration. Meals can be interchangeable with other nutritionally balanced meals. The MCI is nutritionally complete and has been issued for long periods of time; this practice is not recommended, however, as monotony will reduce acceptability.

DISADVANTAGES:

The round metal cans are bulky and heavy and require an opening device. They are difficult to carry on the person and present special problems in handling and opening under extreme cold. The round can requires a drastic heat preservation process, with resultant damage to characteristic product flavor and texture that impacts on ration acceptability and shelf life. Capability for free fall delivery, though meeting the requirements against which this ration was developed, is limited.

COST: \$23.71/box of 12 meals (1 April 1981)

SHELF LIFE (various conditions):

When properly manufactured and packaged, the MCI can be expected to retain its serviceability up to three years under uncontrolled environmental conditions. Periodic surveillance inspection is required to extend or reduce this expectation, with the incidence of inspection increased under adverse conditions. Under controlled, optimum conditions (0°C (32°F) and 50% RH) a serviceable life of seven years or more can be expected; at 4°C (40°F), 60 months; at 21°C (70°F), 24 months; at 32°C (90°F), 12 months.

MEAL, COMBAT, INDIVIDUAL

SUSCEPTIBLE TO DAMAGE BY:

Repeated freezing and thawing adversely affects the texture of entrees. When properly manufactured, packaged and handled, the MCI canned components are resistant to insect and rodent penetration, puncture and breakage.

MEAL/RATION CHARACTERISTICS:

Each meal furnishes approximately one-third of the daily nutrient intake prescribed by regulation AR40-25/BUMEDINST 10110.3E/AFR 160-95.

Weight/case	26 pounds
Weight/meal (less shipping case)	1.81 pounds
Cube/case	0.80 cubic feet
Cube/meal	0.055 cubic feet
Meals/case	12 (1 of each menu)

TYPE PACKAGING:

Round metal can: meat, fruit, cake, spread and a B unit; foil laminated pouch: accessories
fiberboard: outer package.

COMMENTS: Being replaced by the Meal, Ready-to-Eat, Individual



MEAL, COMBAT, INDIVIDUAL

MENUS: (MIL-M-35048E)*

- Menu 1 **Beef w/Spiced Sauce**
 Fruit, Candy, Crackers and Peanut Butter
- Menu 2 **Tuna Fish**
 Fruit, Candy, Crackers, and Peanut Butter
- Menu 3 **Ham/Eggs, Chopped**
 Fruit, Candy, Crackers and Peanut Butter
- Menu 4 **Pork Slices, Cooked w/Juices**
 Fruit, Candy, Crackers, and Peanut Butter
- Menu 5 **Beans w/Frankfurters**
 Cake, Cocoa Beverage, Crackers, and Jam
- Menu 6 **Beef Slices and Potatoes w/Gravy**
 Cake, Cocoa Beverage, Crackers, and Jam
- Menu 7 **Spaghetti w/Beef Chunks in Sauce**
 Cake, Cocoa Beverage, Crackers, and Jam
- Menu 8 **Beans w/Meatballs in Tomato Sauce**
 Cake, Cocoa Beverage, Crackers, and Jam
- Menu 9 **Beefsteak**
 Fruit, Enriched Sweet Chocolate, Crackers and Cheese Spread
- Menu 10 **Chicken or Turkey, Boned**
 Fruit, Enriched Sweet Chocolate, Crackers, and Cheese Spread
- Menu 11 **Ham, Sliced, Cooked w/Juices**
 Fruit, Enriched Sweet Chocolate, Crackers and Cheese Spread
- Menu 12 **Turkey Loaf**
 Fruit, Enriched Sweet Chocolate, Crackers, and Cheese Spread

*All menus include instant coffee, dry, nondairy cream substitute, granulated sugar, salt, and candy coated chewing gum.

MEAL, READY-TO-EAT, INDIVIDUAL

ABBREVIATION: MRE

DATE AVAILABLE FOR TROOP ISSUE:

When present stocks of Meal, Combat Individual and/or Food Packet, In-Flight, Individual, as appropriate, are exhausted.

TYPE—CLASSIFIED (date): 1975

NSN: 8970-00-149-1094

SPECIFICATION: LP/P DES 33-74C

DESIGNED FOR:

Issue to individuals where resupply is established or planned but operational conditions preclude other means of subsistence.

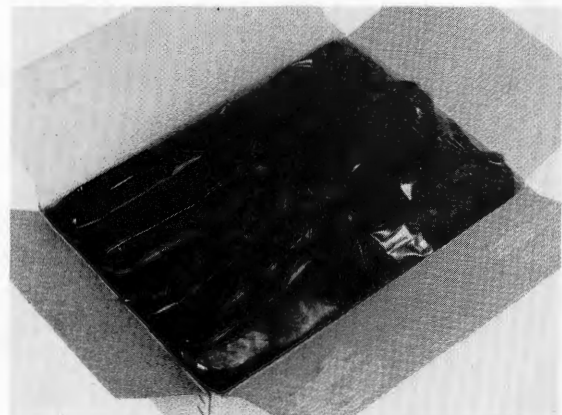
USED BY: All Military Services

RATION/MEAL CONSISTS OF:

Type of Components: All menus are based on flexibly packaged foods which are heat processed in retortable pouches (flexible cans) or ready-to-eat dehydrated foods. Each of the 12 menus provides an entree component, crackers, a spread, an accessory packet, and a plastic spoon. Six menus include fruit, six include cake, and five include brownies or cookies. Five include a vegetable (beans in tomato sauce or potatoes) and seven include cocoa beverage powder. There are five different accessory packets. All contain coffee, cream substitute, sugar, salt, chewing gum, matches, and toilet paper. Three accessory packets provide candy and three an additional condiment (dehydrated catsup or soup and gravy base).

Calories: 1215 average (13.5% from protein; 39.5% from fat; and 47.0% from carbohydrates)

NUMBER OF MENUS: 12



MEAL, READY-TO-EAT, INDIVIDUAL
(12 MEALS/CASE); ONE OF EACH MENU

MEAL, READY-TO-EAT, INDIVIDUAL

PRESENT STATUS: In current procurement.

PREPARED BY: Individuals

REQUIREMENTS FOR PREPARATION:

Water: Drinking water for dehydrated components. All dehydrated items with the exception of beverages, for which the requirements are the same as for the MCI (8 ounces for each coffee and 6 ounces for each cocoa beverage), can be eaten "as is" if necessary.

Equipment: As with the MCI, fuel tablets must be provided separately. Heating of meat components is desirable; for the retort pouch components, this can be accomplished by removing the pouch from its carton and holding by one corner, briefly, over a direct flame, or by heating water in a canteen cup and immersing the pouch in the water.



**CONSUMPTION OF RETORT POUCH
COMPONENT OF MRE**



**RECONSTITUTION OF FREEZE DRIED
MEAT PATTIE COMPONENT OF MRE**

**RETORT POUCH MEAT COMPONENT OF
MEAL, READY-TO-EAT, INDIVIDUAL**

MEAL, READY-TO-EAT, INDIVIDUAL

ADVANTAGES:

The MRE is lightweight, compact, and easy to carry. Components can easily be carried in pockets. An average MRE meal weighs eight ounces less than does the MCI. Individual pouches are notched and thus easily opened by tearing; no can opener is required.

Quality potential of heat processed components is greater than for the MCI because of reduced processing time to attain required end-point temperature for sterility. Shelf life potential, at least for the fruit and meat components, is expected to be greater than for their MCI counterparts as the food contactant layer of the package is inert.

The MRE contains a greater variety of components than the MCI (44 compared to 35). The test prototype also withstood airdrop delivery better than the MCI did.

MRE components are easier to carry on the person and to handle in extreme cold than MCI components. Freezing can be prevented by carrying the pouches next to the person and warming by body heat.

DISADVANTAGES:

The MRE was designed to be acceptable as a sole diet over a period of seven consecutive days. The risk of monotony when used over a long period, though expected to be less than for the MCI, is presently unknown.

ACCEPTANCE RATING BY TROOPS:

Marked troop preference for MRE prototype over MCI in final field tests; namely, Development Test II/Operational Test II (DTII/OTII).

COST: \$48.44/box of 12 menus (1 Jul 82)

SHELF LIFE (various conditions):

Potentially longer serviceability than exhibited by the MCI will be established through storage tests and surveillance data from volume-procured items.

SUSCEPTIBLE TO DAMAGE BY:

Resistance of present menu container to insect penetration is being established. Resistance to damage by other factors is expected to be greater for the MRE, when properly manufactured and packaged, than for the MCI because of the resistance of the MRE's dehydrated components and the durability of the retortable pouch.

MEAL, READY--TO--EAT, INDIVIDUAL

MEAL/RATION CHARACTERISTICS:

Weight/case	16 pounds
Weight/meal (less shipping case)	1.03 pounds, approximately
Cube/case	0.93 cubic feet
Cube/meal	0.052 cubic feet
Meals/case	12 (1 of each menu)

TYPE PACKAGING:

Flexible laminates (food items and accessories) 11-mil polyethylene meal package.



MEAL, READY--TO--EAT, INDIVIDUAL TYPICAL MENU: ALL COMPONENTS FLEXIBLY PACKAGED

COMMENTS:

Supply introduction is in progress. Once stocks are established, the MRE will replace both the MCI and Food Packet, In-Flight, Individual.

MEAL, READY-TO-EAT, INDIVIDUAL

MENUS (LP/P DES 33-74D):*

Menu 1:	Pork Sausage Patty, Freeze-Dehydrated Catsup, Dehydrated Applesauce Crackers	Cheese Spread Cookies, Chocolate Covered Cocoa Beverage Powder
Menu 2:	Ham/Chicken Loaf Strawberries, Freeze-Dehydrated Crackers	Peanut Butter Pineapple Nut Cake
Menu 3:	Beef Patty, Freeze-Dehydrated Soup and Gravy Base Beans w/Tomato Sauce Crackers	Cheese Spread Brownies, Chocolate Covered Candy
Menu 4:	Beef Slices w/BBQ Sauce Crackers Peanut Butter Cookies, Chocolate Covered	Peaches, Freeze Dehydrated Candy
Menu 5:	Beef Stew Crackers Peanut Butter Fruit, Mixed, Freeze Dehydrated	Cherry Nut Cake Cocoa Beverage Powder
Menu 6:	Frankfurters Catsup, Dehydrated Beans w/Tomato Sauce Crackers	Jelly Candy Cocoa Beverage Powder
Menu 7:	Turkey, Diced w/Gravy Potato Patty, Freeze-Dehydrated Crackers Jelly	Maple Nut Cake Cocoa Beverage Powder
Menu 8:	Beef, Diced w/Gravy Beans w/Tomato Sauce Crackers	Cheese Spread Brownie, Chocolate Covered
Menu 9:	Cooked Beef or Chicken a la King Catsup, Dehydrated Crackers Cheese Spread	Fruitcake Cocoa Beverage Powder

MEAL, READY-TO-EAT, INDIVIDUAL

MENUS (LP/P DES 33-74D)* continued

Menu 10:	Meatballs w/BBQ Sauce	
	Potato Patty, Freeze-Dehydrated	Jelly
	Crackers	Chocolate Nut Cake Cocoa Beverage Powder
Menu 11:	Ham Slices	
	Crackers	Orange Nut Roll
	Cheese Spread	Cocoa Beverage Powder
	Peaches, Freeze-Dehydrated	
Menu 12:	Chicken Loaf or Ground Beef w/Spiced Sauce	
	Crackers	Cookies, Chocolate Covered
	Peanut Butter	Candy
	Strawberries, Freeze-Dehydrated	

*All menus include instant coffee, dry, nondairy cream substitute, granulated sugar, salt, and candy coated chewing gum.

RATION, INDIVIDUAL, COMBAT

ABBREVIATION: C Ration

DATE AVAILABLE FOR TROOP ISSUE: Post World War II and Korean periods (See "COMMENTS")

SPECIFICATION: MIL-R-1504

FSN: 56-R-9875 - C Ration; 8970-242-8202 - Ration, Individual, Combat

DESIGNED:

To provide the soldier with a readily carried ration which could be used in combat independent of outside sources of supply and preparation facilities. It was for use during combat engagements, amphibious landings, and other situations where group feeding was not practical and when the tactical situation was so unstable that not even messing in small groups was possible and no kitchen facilities were available, but resupply was planned or established.

Essentially, this ration was designed, beginning late in World War II, to increase the acceptability and utility of the earlier C Ration and to attain suitability for stockpiling for long-term storage. Canned baked products (cake and bread) were developed and canned fruit added to improve acceptability; intermediate cartons, each containing a complete ration, were introduced to facilitate issue to individuals; and long-term storage studies were undertaken to provide a basis for stockpiling and surveillance inspection.



RATION, INDIVIDUAL, COMBAT

RATION, INDIVIDUAL, COMBAT

USED BY: All Military Services

RATION/MEAL CONSISTS OF:

Basis of issue:	One ration per person per day
Types of foods:	Canned and other prepared foods
Calories:	3600, approximately

PRESENT STATUS: Replaced by Meal, Combat, Individual (MCI)

PREPARED BY: The individual consumer.

REQUIREMENTS FOR PREPARATION (MIL-R-1504C):

Water: 44 ounces (3 coffees, 8 ounces each; 1 tea, 8 ounces; and 1 soup mix, 12 ounces)

Equipment: Spoon, canteen, and heat source.

ADVANTAGES:

The ration was packaged so that it could be carried by the individual. Also, it could be eaten either hot or cold and could withstand long-term storage.

DISADVANTAGES:

The C Ration became extremely monotonous with repeated consumption. Excessive use under circumstances which would have permitted one or two kitchen prepared meals per day, had it been capable of issue by meal, further reduced its acceptability and eventually led to extreme unpopularity.

SHELF LIFE:

Ability to withstand stockpiling became an established design principle during the life cycle of this ration.

SUSCEPTIBLE TO DAMAGE BY:

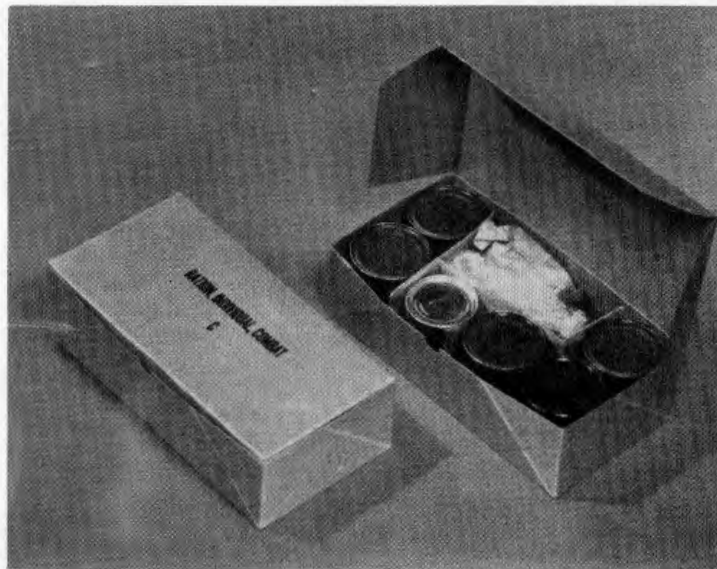
Freezing and some components (for example, beans, potatoes, and the fruits) became mushy with repeated freezing and thawing.

RATION, INDIVIDUAL, COMBAT

MEAL/RATION CHARACTERISTICS:

Weight/case	38 pounds
Weight/ration	6-1/2 pounds
Cube/case	1.2 cubic feet
Rations/case	6

TYPE PACKAGING: Metal cans, except for accessory items



COMMENTS:

This ration was procured under various nomenclatures (E, C-2 through C-10, and Ration, Individual, Combat) for test and supply purposes, against a variety of changing user requirements and supply exigencies. It was intended for limited use only, not for extended periods, nor as a substitute or replacement for Field Ration A or Operational Ration B, as occurred both in Korea and early stages of operations in Vietnam.

MENUS (MIL-C-1504C):

Each ration contained three meat components, two B Units, a can of fruit, a dessert unit, cocoa beverage powder, an accessory carton containing soluble beverages, sugar, cream, and soup, and a packet containing cigarettes, matches, toilet paper, and gum.

RATION, INDIVIDUAL, COMBAT

TWO TYPICAL MENUS FOR (3 MEALS) ONE DAY

Pears
Beefsteak and Potatoes w/Gravy
Meatballs and Beans in Tomato Sauce
Tuna and Noodles w/Vegetables
B-1 Unit*
B-2 Unit**
Fruit Cake
Accessory Packet

Pineapple
Beans w/Frankfurter Chunks
Hamburgers w/o Gravy
Meat, Ground, and Spaghetti
B-1 Unit*
B-2 Unit**
Pecan Roll
Accessory Packet

*B-1 Unit consists of Crackers (5), Cocoa Beverage Powder (disc), Jam

**B-2 Unit consists of Crackers (5), Candy, Jam

K RATION

DATE AVAILABLE FOR TROOP ISSUE: 1942 through World War II

TYPE—CLASSIFIED (date): 1942

FSN: 56—R—10500

DESIGNED:

As a lightweight, nutritional ration for paratroopers, tank soldiers, and others who needed more sustenance than the emergency D Ration¹⁰ gave but more compact than the C Ration.

USED BY: The individual consumer.

RATION/MEAL CONSISTS OF:

Types of foods:

Canned meat products, compressed cereal bars, fruit bars, biscuits, and canned cheese products.

Calories: 3145 to 3397

PRESENT STATUS: Obsolete as of 1946.

PREPARED BY: The individual consumer.

REQUIREMENTS FOR PREPARATION:

Water: 46 ounces per ration for reconstitution of beverages and bouillon (with an additional 12 ounces for consumption of the chocolate D bar as a beverage).

Equipment: Canteen cup and means of heating water.

ADVANTAGES:

The K Ration was an individual, easy-to-carry ration that could be used in assault and combat operations. It was noted for compactness and superior packaging and, within the technology then available, it provided the greatest variety of nutritionally balanced components within the smallest space.

DISADVANTAGES:

Misuse was a major factor in the K Ration's unpopularity. Although designed for only two or three days' use, it was sometimes used for weeks. Its concentrated, calorically dense components, together with inclusion of the D bar (a World War II emergency ration, which was not designed to be acceptable) as a confection, further contributed to adverse reactions.

¹⁰See reference 1.

K RATION

MEAL/RATION CHARACTERISTICS (1943):

Weight/case	43 pounds (12 rations)
Weight/ration	2.75 pounds (3 units)
Cube/case	1.34 cubic feet
Cube/ration	0.112 cubic feet (3 units)
Rations/case	12 (36 units)

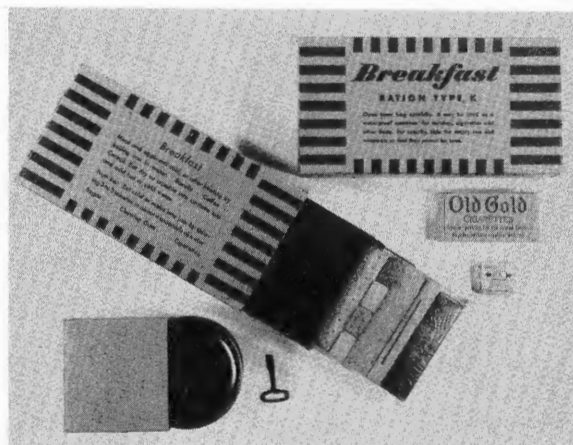
TYPE PACKAGING:

The biscuits, beverages, sugar, fruit bar, confections, and gum were packaged in a laminated cellophane bag, while the canned meat and cheese products were put in a chipboard sleeve-type box. The two units were assembled and sealed in a waxed carton inclosed in the nonwaxed outer carton labeled with the K Ration design and color. Twelve complete rations were packed in a fiberboard box which was overpacked in a nailed wood box for oversea shipment.

COMMENTS:

Items in the K Ration underwent many changes during World War II. Thus different veterans recall different elements. Essentially, the changes reflected a gradual reversal from initial, strong emphasis on nutrient density to acceptability. However, revisions in which acceptability had become a major design principle were not procured.

The K Ration was one of the most famous and best remembered World War II combat rations. It was the first packaged operational ration to be assembled so as to permit issue on a meal-unit basis. In some senses, as in its initial concept of use, it can be regarded as the forerunner of the present Food Packet, Long Range Patrol.



K RATION

MENUS (QMC Tentative Specification CDQ 28E and AM-1, 4 June 1943):

Breakfast Unit:

Canned Ham and Eggs
K-1 ("energy") Biscuits
Compressed Graham Crackers
Soluble Coffee
Fruit Bar
Gum (one stick)
Sugar Tablets (4)
Four Cigarettes
Can Opener (key)

Dinner Unit:

Canned Cheese
K-1 Biscuits
Candy Bar
Gum (one stick)
Lemon Juice Powder, Synthetic
Sugar Tablets (4)
Cigarettes and Matches
Can Opener (key)

Supper Unit:

Canned Meat Product
K-1 Biscuits
Compressed Graham Crackers
Bouillon Powder
D Bar (two ounces)
Gum (one stick)
Toilet Paper
Cigarettes
Can Opener (key)

RATION, SMALL DETACHMENT, 5 PERSONS

ABBREVIATION: 5-in-1

DATE AVAILABLE FOR TROOP ISSUE:

Different versions were procured from 1947 through the Korean War. This ration reflected continuing evolution of the World War II 5-in-1 and 10-in-1 rations.

FSN: 8970-194-3986 through 3990 for Menus 1 through 5, respectively. These represented the standard item used by the Army, Marine Corps, and Navy.

8970-194-3991 through 4000 represented a series of "experimental" packs (1951) used by the Army only.

SPECIFICATION: MIL-R-10754

DESIGNED:

As a ration that would be convenient to issue and could be prepared by small groups of men and minimum cooking equipment and skill deployed beyond range of the unit kitchen. Each shipping case provided subsistence for five men for one day or 15 men for one meal.

USED BY: Intended for motorized combat groups and gun or tank crews.

RATION/MEAL CONSISTS OF:

Types of components: Canned meats, vegetables, and soup intended to be eaten hot; canned bread, canned cakes, spreads, candy, compressed cereal, cocoa beverage powder, coffee, cream and sugar, salt, chewing gum, cigarettes, matches, towels, soap, and a can opener.

Calories: 3600, approximately

NUMBER OF MENUS: 5

PRESENT STATUS: Not stocklisted since 1963; specification cancelled 27 July 1975.

PREPARED BY: Small groups

REQUIREMENTS FOR PREPARATION:

Water: Required for condensed soups, cocoa beverage and instant coffee.

Equipment: Small detachment cooking outfits and individual mess equipment. Mountain cook sets or other equipment needed to warm cans.

RATION, SMALL DETACHMENT, 5 PERSONS

ADVANTAGES:

Each menu was nutritionally adequate and supplied approximately 3600 calories per ration. Under certain special conditions, e.g., amphibious exercises, the ration could be used for a limited time for organizational subsistence. The ration was easier to procure than most. To facilitate procurement, wherever possible, commercially marketed can sizes were utilized for all components. Nonstandardization of can sizes was ultimately regarded as a disadvantage, however, and addressed in later specifications.

DISADVANTAGES:

This item was issued only as a ration. Its design did not permit issue in meal increments. It was not suitable for issue to individuals (i.e., one man for five days) as most of its components were packed in five-man portions. It was also heavy, 31 pounds.

SHELF LIFE (various conditions):

Shelf life was comparable to that of the Ration, Combat, Individual.

SUSCEPTIBLE TO/DAMAGED BY:

Components such as sweet potatoes, white potatoes, beans and fruit did not withstand repeated freezing and thawing well. Insect infestation was a problem with dry pack components.

RATION CHARACTERISTICS:

Weight/case	31 pounds
Weight/ration	6.2 pounds
Cube/case	1.1 cubic feet
Cube/ration	0.2367 cubic feet
Rations/case	5

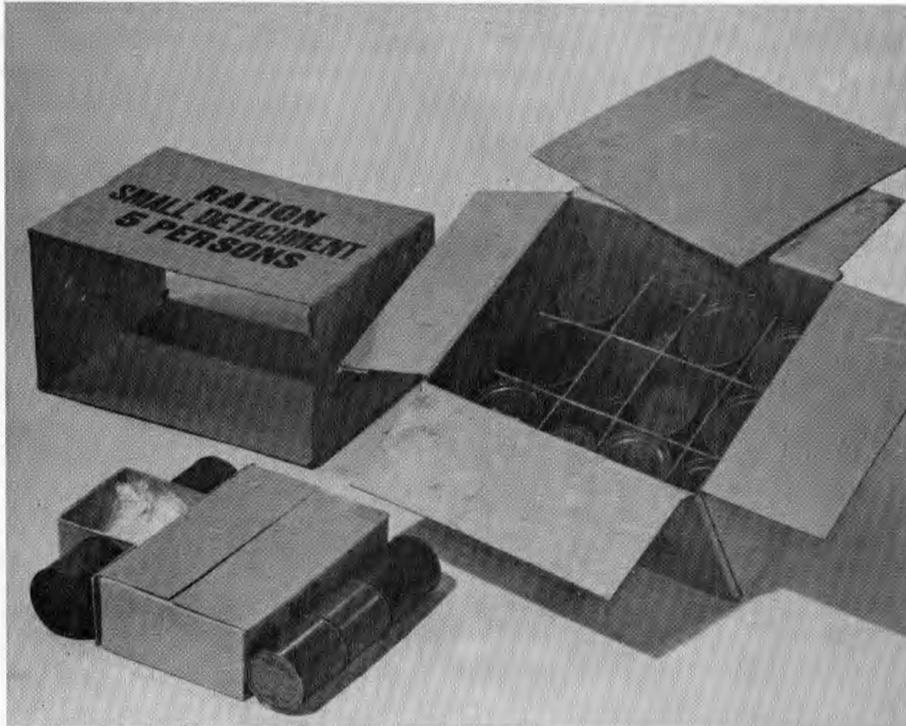
TYPE PACKAGING:

Items packaged as a group to subsist five men for one day. To facilitate procurement, commercially available can sizes were used to the extent possible.

RATION, SMALL DETACHMENT, 5 PERSONS

COMMENTS:

As the situation in Korea stabilized, permitting increasing use of the A and B Rations, stockpiles of the 5-in-1 accumulated and were eventually force-issued under situations for which other rations, particularly the C, had been designed. Although the 5-Man and subsequently 6-Man Quick-Serve modules were initially intended to replace the 5-in-1, the two rations possessed somewhat different functional characteristics. Authorization for procurement of the 5-in-1 was withdrawn on the basis of its planned replacement by the 6-Man Quick-Serve.



RATION, SMALL DETACHMENT, 5 PERSONS

MENUS (MIL-R-10754B):*

Menu 1: Ham and Eggs
Beef w/Gravy
Salmon or Tuna Fish
Peas
Tomatoes
Potato Sticks
Compressed Cereal
Bread
Cheese Spread
Jam
Peanut Butter
Shelled, Roasted Peanuts
Pound Cake
Peaches
Pineapple

Menu 2: Sliced Bacon
Ham and Gravy
Meat Balls and Spaghetti
w/Sauce
Green Beans
Corn
Beans w/Pork in Tomato Sauce
Potato Sticks
Condensed Soup
Bread
Cheese Spread
Jam
Peanut Butter
Steamed Pudding
Fruit Cocktail
Candy

Menu 3: Beans and Ham in Sauce
Frankfurters
Luncheon Meat
Condensed Soup
Potato Sticks
Compressed Cereal
Bread
Cheese Spread
Jam
Fruitcake
Applesauce
Apricots
Candy

Menu 4: Beef w/Gravy
Pork w/Gravy
Pork Sausage Links
Corn
Beans w/Pork in Tomato
Sauce
Lima Beans
Compressed Cereal
Bread
Jam
Peanut Butter
Applesauce
Peaches
Candy
Sandwich Cookies

Menu 5: Sliced Bacon
Beef and Vegetables w/Gravy
Boned Chicken w/Gravy
Potato Sticks
Green Beans
Beans w/Pork in Tomato
Sauce
Condensed Soup
Bread
Jam
Peanut Butter
Candy
Pound Cake
Pecan Cake Roll
Pears

*Each menu included: a "Dry Pack" containing candy, candy-coated chewing gum, cocoa beverage powder, salt, sugar, toilet paper, soap, cigarettes, matches, can openers, towels, dry cream, and instant coffee; a menu sheet showing a suggested meal plan; and 15 plastic spoons.

MEAL, LANDING FORCE, 25 PERSONS

DATE AVAILABLE FOR TROOP ISSUE:

Not applicable; this item was procured on only a small quantity basis for Marine Corps testing in 1955.

SPECIFICATION: MIL-M-12837

DESIGNED FOR:

Use during amphibious operations, to fill the gap between the time continued use of the Ration, Individual, Combat began and when use of the B Ration became practicable. Essentially, it reflected a Marine Corps requirement for a prepackaged "B" type of ration which could be utilized by small groups with minimal food preparation skill or equipment and which could be consumed, at least to a significant extent, without heating.

USED BY: Marine Corps (small units) for test purposes.

RATION/MEAL CONSISTS OF:

Types of components:

Canned foods, with dehydrated soups, juices, potatoes, cocoa and coffee, condiments, coffee, cream substitute, can openers, disposable trays, and a menu sheet.

Calories: 3600 approximately (for three meals)

NUMBER OF MENUS: Seven breakfast menus and 14 dinner/supper menus.

PRESENT STATUS:

The Marine Corps, as the sole user, withdrew its interest in this item 13 March 1962, resulting in termination of further effort.

PREPARED BY:

Members of small units, with limited, separately provided, heating equipment.

MEAL, LANDING FORCE, 25 PERSONS

REQUIREMENTS FOR PREPARATION:

Water: For reconstitution of dehydrated soups and beverages.

Equipment: The following preparation equipment was used for testing:

- a. Battalion mess — Range, Field, M-1937
- b. Company mess — Cooking Outfit, small detachment
- c. Platoon, squad, and fire team — stove, cooking, gasoline, one-burner M-1950 w/case.

ADVANTAGES:

Convenience of issue: each pack provided sufficient food for one meal for 25 persons. Minimal preparation required.



DISADVANTAGES:

Weight and bulk.

ACCEPTANCE RATING BY TROOPS:

USMC testing found this item generally acceptable but criticized (a) lack of variety and acceptability in specific menus, and (b) absence of cigarettes.

MEAL, LANDING FORCE, 25 PERSONS

MEAL/RATION CHARACTERISTICS:

Weight/case of 25 meals 38 to 50 pounds

Cube/case of 25 meals 1.5 cubic feet

TYPE PACKAGING:

Each case provided components for one meal for 25 persons. Food components were packaged in round metal cans.

COMMENTS:

This item was one of several requested by users to meet an often experienced need, especially in emergencies, when subsistence on an individually packaged meal is neither necessary nor desirable but where a balanced B ration is either not available or cannot be prepared.

MEAL, LANDING FORCE, 25 PERSONS

MENUS (MIL-M-12837A):*

Breakfast #1

Apricots
Malted Cereal Granules
Corned Beef Hash

#3

Orange Juice
Corn Flakes
Bacon
Bread/Jelly/Margarine

#5

Peaches
Ham and Eggs
Mashed Potatoes
Bread/Jam/Margarine

#7

Grapefruit Juice
Corn and Malted Wheat Flakes
Ham and Eggs/Potato Sticks
Bread/Jelly/Margarine

Dinners/Suppers #1

Chicken and Gravy
Mashed Potatoes/Lima Beans
Bread/Margarine
Peaches/Candy

#3

Cream of Potato Soup
Beef w/Gravy/Carrots
Bread/Onion Flakes/Jam
Fig Pudding/Candy

#5

Chicken Broth
Chicken and Gravy
Mashed Potatoes/Green Beans
Bread/Margarine
Pound Cake

#2

Pineapple
Corn and Soya Cereal
Luncheon Meat
Mashed Potatoes
Bread/Jam/Margarine

#4

Orange Juice
Wheat Flakes
Luncheon Meat
Potato Sticks
Bread/Jam/Margarine

#6

Grapefruit Juice
Corn and Bran Flakes
Pork Sausage Links/Baked Beans
Bread/Jam/Margarine

#2

Roast Beef
Mashed Potatoes/Peas
Bread/Jelly/Margarine
Onion Flakes
Pineapple Rice Pudding

#4

Beef w/Gravy
Mashed Potatoes/Green Beans
Bread/Margarine
Pears/Peanuts

#6

Pork and Gravy
Mashed Potatoes/Apple Sauce
Bread/Cheese Spread/Margarine
Date Pudding

MEAL, LANDING FORCE, 25 PERSONS

MENUS (MIL-M-12837A):* continued

Dinners/Suppers #7

Salmon
Potato Sticks/Peas
Bread/Cheese Spread
Fruitcake

#8

Chicken Broth
Pork and Gravy
Rice/Wax Beans
Bread/Margarine
Fruitcake

#9

Pea Soup
Ham Chunks/Corn
Bread/Margarine
Pound Cake

#10

Beef Broth
Roast Beef
Corn/Lima Beans
Bread/Cheese Spread
Cookies

#11

Cream of Onion Soup
Frankfurters/Beans with Pork
Bread/Margarine
Cookies

#12

Lima Bean Soup
Chicken or Turkey/Corn
Bread/Peanut Butter
Fruit Cocktail

#13

Ham and Gravy
Beans with Pork/Applesauce
Bread/Cheese Spread
Cookies

#14

Chili Con Carne
Potato Sticks/Kidney Beans
Bread/Cheese Spread
Fruitcake

*Each menu included: cocoa, coffee, salt, pepper, sugar, cream substitute, can openers, trays and a menu sheet.

MEAL, UNCOOKED, 25-MAN

DESIGNED:

To provide a ration, factory-assembled and packaged by meals, in a 25-man module, which would simplify field preparation, have reduced weight and volume, require no refrigeration, and yet be adequate in nutrition and acceptability to maintain the performance of combat forces when fed for an extended period without supplementation by perishables. This ration was intended to replace the B Ration, especially in the early days of operations, where food service personnel and at least limited preparation facilities are available but a balanced B Ration could not be supplied.

RATION/MEAL CONSISTS OF:

Basic food components for 18 meals (6 each breakfast, dinner, and supper) for 25 persons.

Type of components: Maximum use of dehydrated foods in flexible packages. When supplemented by bread and cake, separately provided, furnished a complete meal meeting AR 40-564 (currently AR 40-25) requirements.

Calories: Breakfast, dinner, and supper meals were designed so that any three meals, when supplemented by bread and cakes separately provided, furnished the daily nutritional requirements set forth in AR 40-564 (including 3600 calories per man) for 25 men, and any one meal, when supplemented by bread and cakes, separately provided, furnished one-third of the daily nutritional requirements (including 1200 calories per man) for 25 men.



MEAL, UNCOOKED, 25-MAN

MEAL, UNCOOKED, 25-MAN

NUMBER OF MENUS:

Eighteen nutritionally interchangeable menus (30 menus were planned but the 12 additional meals were never procured).

PRESENT STATUS:

Development was terminated in 1972 as the result of DA user/developer agreement that the "bulk" B Ration components would continue to be required worldwide and because DA, at that time, foresaw no valid need for any type of small unit ration pack.

PREPARED BY: Cooks with training.

REQUIREMENTS FOR PREPARATION:

Water:

Cold water 44.72 quarts average and 123.25 quarts hot water average (41.99 gallons), for food preparation only, sanitation water not included.

Equipment: For heating water and basic field preparation equipment (stoves, ovens, grills, etc.).

Other: Recipes included on labels.

ADVANTAGES:

Compact, lightweight, easy to prepare, and everything required for a meal for 25 persons contained in one box except for bread, cakes, and water. It required no refrigeration.

DISADVANTAGES:

Contained uncooked items which (a) required preparation, and (b) entailed some stability problems (which were not encountered with precooked counterparts in the Quick-Serve Meals).

SPECIAL CRITERIA:

No detrimental physiological effects when consumed over a period of one year as a sole diet with bread and cakes provided separately.

SHELF LIFE (various conditions):

Potential shelf life considered less than that of Quick-Serve Meal.

SUSCEPTIBLE TO DAMAGE: Insect and rodent resistance not determined.

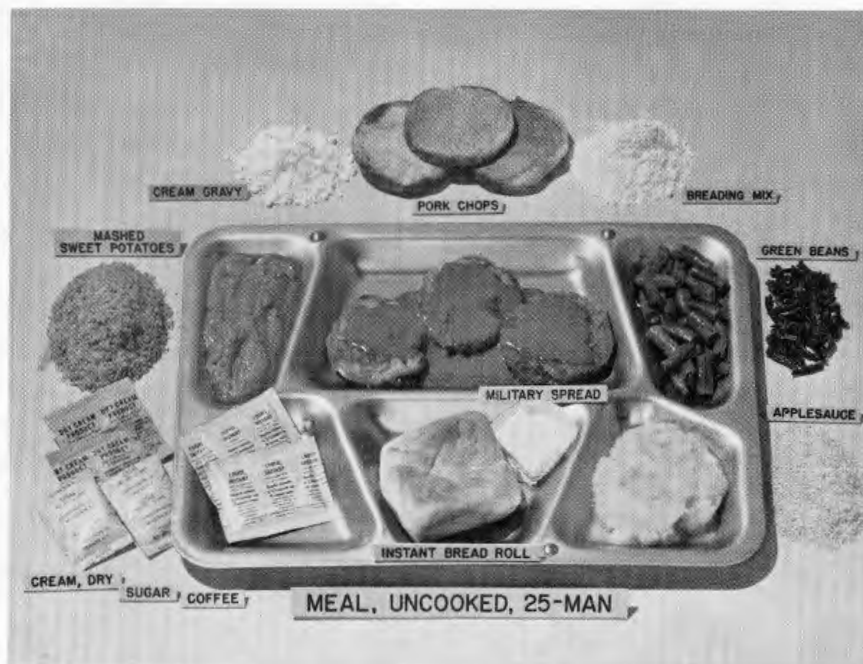
MEAL, UNCOOKED, 25-MAN

MEAL/RATION CHARACTERISTICS:

Weight/case (25 meals):	19.2 pounds
Cube/case (25 meals):	0.86 cubic feet
Meal/case	25

COMMENTS:

Nine prototype menus were successful in FY63 engineering testing. In FY65-66 engineering testing 18 menus showed only minor shortcomings; the Vietnam War, however, precluded conducting service testing as planned. Many components developed for the Meal were adopted (in round metal cans rather than in flexible packages) on a line item basis for the B Ration.



DINNER 6. JELLY AND OATMEAL COOKIES NOT SHOWN

MEAL, UNCOOKED, 25-MAN

MENUS:

BREAKFAST

Menu 1:

Fruit Cup
Oatmeal/Milk
Scrambled Eggs
Crisp Bacon
Toast
Margarine
Jelly
Coffee — Tea
Cocoa
Cream — Sugar

Menu 2:

Orange Juice
Sugared Cornflakes/
Milk
Cheese Toast
Hashed Brown Pot.
Catsup
Bacon
Bread
Margarine
Coffee — Tea
Cream — Sugar

Menu 3:

Pineapple Juice
Grapenuts/Milk
Beef & Pot. Hash
Catsup
Cinnamon Toast
Margarine
Coffee — Tea
Cream — Sugar

DINNER

Meat Balls
Navy Beans w/Tom. Sce
Onion Relish
Bread
Peanut Butter
Yellow Cake
w/Vanilla Icing
Coffee — Tea
Cream — Sugar

Chili Con Carne
w/Beans
Seasoned Macaroni
Spinach
Bread
Margarine
Apple Slice Bar
Coffee — Tea
Milk
Cream — Sugar

Sliced Roast Pork
w/Cream Gravy
Mashed Potatoes
Peas & Carrots
Bread
Margarine
White Cake
w/Strawberry Sce
Coffee — Tea
Milk
Cream — Sugar

SUPPER

Green Pea Soup
Crackers
Breaded Fish Squares
Catsup
Mashed Potatoes
Corn
Bread
Margarine
Jelly
Butterscotch Pudding
Coffee — Tea
Cream — Sugar

Onion Soup
Crackers
Breaded Steaks
Spanish Rice
Cabbage Slaw
Bread
Margarine
Jelly
Chocolate Pudding
Coffee — Tea
Cream — Sugar

Tomato-Vegetable
Noodle Soup
Crackers
Chicken Pie w/Biscuit Topping
Lima Beans
Bread
Margarine
Jelly
Chocolate Chip
Oatmeal Cookies
Coffee — Tea
Cream — Sugar

MEAL, UNCOOKED, 25-MAN

MENUS:

BREAKFAST

Menu 4:

Hash Brown Pot.
Scrambled Eggs
Bacon
Bread
Margarine
Jelly
Coffee — Tea
Cocoa
Cream — Sugar

Menu 5:

Applesauce
Hot Wheat Cereal/Milk
Scrambled Eggs
Bacon
Bread
Margarine
Jelly
Coffee — Tea
Cocoa
Cream — Sugar

Menu 6:

Milk
Cereal Bars
Pancakes w/Maple
Syrup
Bacon
Bread
Margarine
Coffee — Tea
Cream — Sugar

DINNER

Grilled Hamburgers
Mustard
Catsup
Lyonnais Potatoes
Peas
Bread
Margarine
Gingerbread
Coffee — Tea
Milk
Cream — Sugar

Chicken & Vegetables
Rice
Bread
Margarine
Jelly
Apricot Cobbler
Coffee — Tea
Milk
Cream — Sugar

Breaded Pork Chops
Cream Gravy
Mashed Sweet Potatoes
Green Beans w/Bacon
Bread
Margarine
Jelly
Applesauce
Oatmeal Cookies
Coffee — Tea
Cream — Sugar

SUPPER

Cream of Potato Soup
Crackers
Macaroni & Meat Sauce
Seasoned Green Beans
Margarine
Garlic Bread
Apple Crisp
Cheese Cubes
Coffee — Tea
Cream — Sugar

Chicken Noodle Soup
Crackers
Grilled Beef Flaked Steaks
w/Mushrooms
Brown Gravy
Mashed Potatoes
Seasoned Corn & Lima Beans
Bread
Margarine
White Cake w/ Peanut
Butter Icing
Coffee — Tea
Cream — Sugar

Lima Bean Soup
Crackers
Beef Stew
Rice
Bread
Margarine
Jelly
Devils Food Cake
w/Chocolate Icing
Coffee — Tea
Cream — Sugar

MEAL, UNCOOKED, 25-MAN

MENUS: (Planned)

BREAKFAST

Menu 7:

Orange-Pineapple Juice
Oatmeal w/Milk
Scrambled Eggs
Pork Sausage Links
Toast
Margarine
Jelly
Cocoa
Coffee — Tea
Cream — Sugar

Menu 8:

Grapefruit Juice
Hot Wheat Cereal
w/Milk
Scrambled Eggs
Grilled Bacon
Toast
Margarine
Jelly
Milk
Coffee — Tea
Cream — Sugar

Menu 9:

Strawberries
Sugar Coated Corn-
flakes/Milk
Browned Beef Hash
Toast
Margarine/Jelly
Coffee — Tea
Cocoa
Cream — Sugar

Menu 10:

Orange Juice
Oatmeal w/Milk
Scrambled Eggs
Bacon
Toast
Bear Claw Rolls
Margarine/Jelly
Coffee — Sugar

DINNER

Swiss Steak
Mashed Potatoes
Seasoned Peas/Carrots
Bread
Margarine
Jelly
Chocolate Chip Cookies
Coffee — Tea
Cream — Sugar

Meatloaf w/Mushroom
Gravy
Catsup
Mashed Potatoes
Mexican Corn
Bread — Margarine
Jelly
Butterscotch Brownie
Coffee — Tea
Cream — Sugar

Pepper Steaks
Mashed Potatoes
Seasoned Peas
Cabbage Slaw
Bread
Margarine
White Cake w/Vanilla
Coconut Icing (toasted)
Milk
Coffee — Tea
Cream — Sugar

Turkey a la King w/Rice
Seasoned Peas & Carrots
Bread
Margarine
Jelly
Cherry Cobbler
Coffee — Tea
Milk
Cream — Sugar

SUPPER

Tomato-Vegetable Soup
w/Noodles
Crackers
Ground Beef w/Cream Gravy
Seasoned Rice
Green Bean Salad
Bread
Margarine
Jelly
Apricot Shortcake
Coffee — Tea
Cream — Sugar

Green Pea Soup
Crackers
Chicken Salad Sandwich
Lyonnaise Potatoes
Fruit Mix in Gelatin
Yellow Cake Mix
w/Chocolate Icing
Margarine
Coffee — Tea
Cream — Sugar

Cream of Mushroom Soup
Crackers
Baked Tuna w/Noodles
Seasoned Green Beans
Bread
Margarine
Jelly
Peach Turnovers
Coffee — Tea
Cream — Sugar

Chicken Noodle Soup
Crackers
Baked Pork & Escalloped
Potatoes
Applesauce
Spinach Vinegarette
Margarine/Bread/Jelly
Chocolate Brownie
Coffee — Tea
Cream — Sugar

MEAL, QUICK-SERVE, 6-MAN

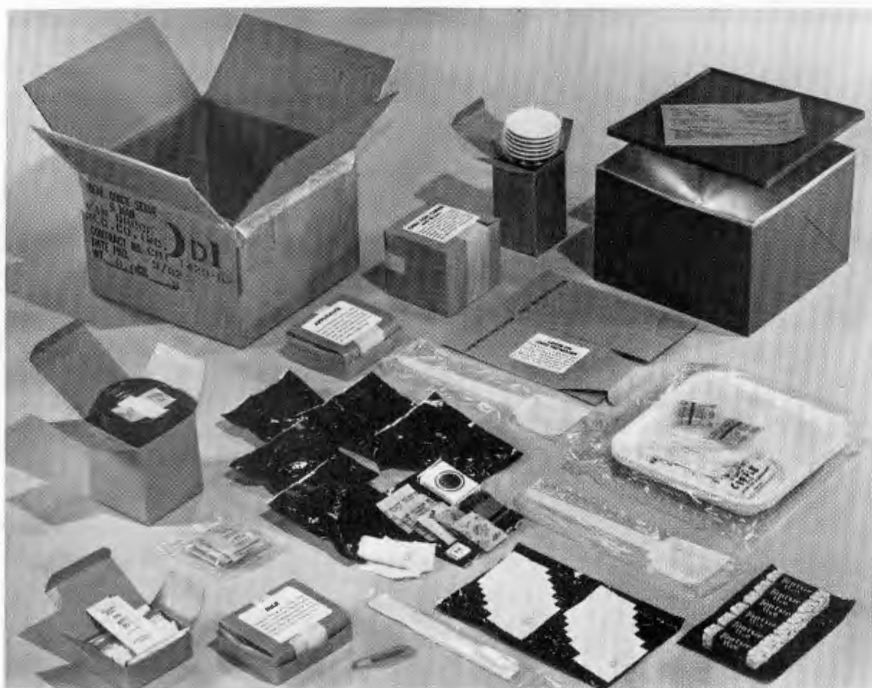
DESIGNED:

To contribute to maximum mobility by providing a simplified means of supplying hot meals to dispersed troops over extended periods, without refrigeration, special food preparation, or trained food service personnel. It was required to be suitable as a sole diet for over 120 days, with any three meals comprising a complete ration and as well as for interchangeability with other packaged meals to provide a complete ration as the tactical logistical conditions permit. Throughout its developmental history the Quick-Serve Meal was designed in several module sizes; initial requirements for 25- and 5-man modules were revised to call for 25- and 6-man configurations. After highly successful service testing of the latter two, the Army revised its module size requirement to call for a 6-man configuration only. As four 6-man modules were packed in each shipping case, this assembly was considered capable of meeting a wide variety of contingencies. Two-man and one-man modules, without food service components, were designed for the Air Force for use in high altitude simulator studies at Brooks Air Force Base.

The ration was intended for use in both the support section and in combat areas when the tactical situation precludes the preparation and serving of kitchen prepared meals. It also offered potential for use in early days of emergencies, when a balanced B Ration cannot be made available.

USED BY:

Small groups, under conditions precluding unit messing but allowing limited food preparation (without organizational mess equipment) and where normal water supply and planned resupply of food are established.



MEAL, QUICK SERVE, 6-MAN

MEAL, QUICK-SERVE, 6-MAN

NUMBER OF MENUS: 21 (seven each for breakfast, dinner, and supper)

PRESENT STATUS:

Although this ration was highly acceptable in field tests, it was never adopted because of a higher echelon decision that it was not required.

RATION/MEAL CONSISTS OF:

Types of components: Primarily precooked and freeze-dried foods. Intermediate moisture canned cakes and canned bread were also included in the meals. The meals included expendable food service equipment (can openers, paper cups, plastic scoops, spoons and knives, paper plates, paddles), cigarettes, matches, toilet paper, wet paper cleansing towels, and instruction sheets. Unit packages of freeze-dried food served also as rehydration and serving vessels. Components such as apple sauce, instant soups and juices, which expanded upon rehydration, were packaged in bellows type reconstitution cartons. An aluminum insert placed inside the fiberboard carton to serve as an intermediate container for each meal module functioned as a water heating vessel.

PREPARED BY:

No trained food service personnel required to prepare the meal.

REQUIREMENTS FOR PREPARATION:

Water: Hot and cold water were required. Normal supply of drinking water must be available.

Equipment: No equipment other than a water heating device was needed for preparation and consumption. All necessary mess gear was expendable and packaged with the meals; simple directions for preparation were included.

ADVANTAGES:

Meals were nutritionally balanced, and three meals constituted a complete ration and could be used interchangeably with other packaged meals. All components for the meal and its preparation, except water and a water-heating device, were included in the meal package. High acceptability of dehydrated components was demonstrated, even on repeated consumption. Other advantages include: ease of preparation, resistance to damage from rough handling and air drop, long shelf life, light weight, and resistance to insect and rodent penetration.

DISADVANTAGES:

No commercial base for hermetically sealed aluminum insert.

MEAL, QUICK-SERVE, 6-MAN

SPECIAL CRITERIA:

Design constraints: No detrimental physiological effects when consumed as a sole diet for a period of not less than 120 consecutive days.

SHELF LIFE:

Storage tests showed that the serviceable shelf life of the prototypes exceeded the requirement of six months at 38°C (100°F). The maximum shelf life of its precooked dehydrated components was never determined.

MEAL/RATION CHARACTERISTICS:

Weight/case	41.5 pounds gross
Weight/module	9.2 pounds gross
Cube/case	2.440 cubic feet
Cube/module	0.56 cubic feet
Modules/case	4

TYPE PACKAGING:

Flexible packaging of components, except for canned bread and cakes. Components for each meal were assembled into an aluminum box, which was then hermetically sealed, and which served both to protect against insect and rodents and as a water heating vessel; each sealed aluminum box was placed in an intermediate fiberboard box. Four identical menu boxes were packed in a V3c shipping case.

COMMENTS:

Capable of airdrop delivery with 75% recovery and all means of transportation including animal pack and man-carry.

An accessory packet containing cigarettes, matches, toilet paper, chewing gum, and weapons cleaning patches was included with each meal.

This ration (particularly the 2-Man module) was the immediate forerunner of the Food Packet, Long Range Patrol. The Quick-Serve Meal, however, was developed when freeze-drying of foods was in its infancy. Meat components, pasta, legume, or vegetable components and sauce components were all produced separately. While this resulted in economies in space and production, it put limitations on rehydration, requiring hot water and a soak of 20 minutes. Meat items were freeze-dried and other items were air-dried. Today the complete Long Range Patrol entrees, such as spaghetti with meat sauce, are processed as one item.

MEAL, QUICK-SERVE, 6-MAN

MENUS (LP/P DES 11-66)*

Breakfast

B-1

Orange/Grapefruit Juice
Pork Sausage w/Cream
Gravy
Rice
Pecan Roll/Margarine

B-2

Oatmeal w/Milk
Bacon and Scrambled Eggs
Bread/Jelly
Cocoa Beverage

B-3

Orange Juice
Cereal Bar
Beef Hash
Pecan Roll/Margarine

B-4

Oatmeal w/Milk
Strawberries
Bread/Bacon/Cheese Spread
Cocoa Beverage

B-5

Orange/Grapefruit Juice
Beans w/Tomato Sauce
Bread/Bacon/Margarine

B-6

Grapefruit Juice
Beef w/Onion Gravy
Pecan Roll/Margarine

Dinner

D-1

Chili Con Carne w/Beans
Bread/Jelly/Margarine
Applesauce
Milk

D-2

Lima Bean Soup
Chicken Stew
Bread/Jelly/Margarine
Chocolate Pudding

D-3

Meat Balls w/Brown Gravy
Mashed Potatoes w/Peas
Bread/Jelly/Margarine
Peaches

D-4

Grapefruit Juice
Beef w/Spaghetti Sauce
Bread/Jelly/Margarine
Butterscotch Pudding

D-5

Chicken Rice Soup
Beef Stew
Bread/Jelly/Margarine
Applesauce

D-6

Beef Broth w/Rice
Meat Balls w/Beans and
Tomato Gravy
Bread/Jelly/Margarine
Fruit Cocktail

Supper

S-1

Chicken w/Gravy
Mashed Potatoes/Peas
Bread/Margarine
Fruit Cake
Cocoa Beverage

S-2

Sliced Beef w/Brown Gravy
Macaroni and Cheese
Green Beans w/Bacon
Bread/Margarine
Date Pudding
Milk

S-3

Beef w/Barbeque Sauce
Rice w/Spinach
Raisin Nut Cake
Bread/Margarine
Cocoa Beverage

S-4

Beef Pot Roast
Mashed Potatoes
Corn and Lima Beans
Bread/Margarine
Orange Nut Roll
Milk

S-5

Beef Loaf w/Brown Gravy
Mashed Potatoes
Cabbage Slaw
Bread/Cheese Spread
Fig Pudding
Cocoa Beverage

S-6

Pork Sausage w/Cream Gravy
Mashed Sweet Potatoes
Green Beans
Bread/Margarine
Chocolate Nut Roll
Milk

MEAL, QUICK-SERVE, 6-MAN

MENUS (LP/P DES 11-66)*

Breakfast	Dinner	Supper
B-7	D-7	S-7
Orange Juice	Pea Soup	Beef Loaf w/Tomato Gravy
Cereal Bar	Chicken w/Rice	Macaroni
Scrambled Eggs/Bacon	Bread/Jelly/Margarine	Applesauce
Bread/Jelly	Apricots and Pears	Bread/Margarine
		Cocoa Beverage
		Pound Cake

*All meals included coffee, sugar, and cream substitute; all breakfast and dinner meals included candy.

SMALL UNIT MEAL, 4 PERSONS (SUM)

DESIGNED:

To provide a means of furnishing highly acceptable hot meals to small groups in situations precluding organized messing or reliance on organizational food service personnel/equipment but which do permit small group subsistence. The SUM was to provide a 10-day cycle of flexibly packaged, lightweight, stable foods, in four and 14-man modules, with initial emphasis on the former. The meals were to be easily prepared, contain all components for preparation and consumption except water and a source of heat, and to be nutritionally adequate over extended periods when used interchangeably with the MCI.

USED BY: Marine Corps

RATION/MEAL CONSISTED OF:

Types of foods:

Dehydrated or ready-to-eat foods. An inner polyethylene bag was the reconstitution package for dehydrated components.



SMALL UNIT MEAL, 4 PERSONS

NUMBER OF MENUS: Four prototypes (one breakfast, three interchangeable as either dinner or supper).

PRESENT STATUS:

Requirement cancelled as a result of change, developed in 1974, in Marine Corps philosophy of field feeding.

SMALL UNIT MEAL, 4 PERSONS (SUM)

PREPARED BY: Individual consumers.

REQUIREMENTS FOR PREPARATION:

Water: 110–136 ounces per meal for four persons.

Equipment: Canteen cup and heat source.

ADVANTAGES:

The meal was lightweight and compact. All components for preparation and consumption except a canteen cup, water, and source of heat were provided with the meal.

DISADVANTAGES:

Adverse comments included objections to the preparation required and to 4-person module size. (In addition, USMC was then attempting to practice water economy, which is now contrary to doctrine, and complained of requirement and logistical strain of supplying five canteen cups of water for each meal.)

SPECIAL CRITERIA:

Design Constraints: Suitability for extended, interchangeable use with the Meal, Combat, Individual.

MEAL/RATION CHARACTERISTICS:

Weight/case (4 modules)	27.9 pounds (initial prototype)
Weight/module (4 meals)	6.23 pounds average (initial prototype)
Cube/case (4 modules)	2.7 cubic feet (initial prototype)
Cube/module	0.59 cubic feet (initial prototype)
Modules/case	4 (16 meals)

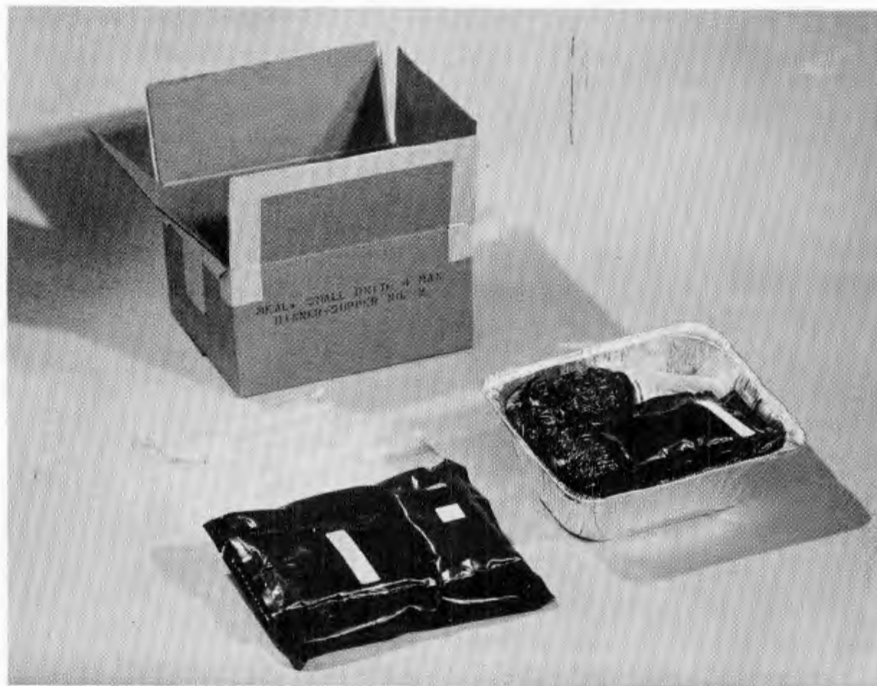
TYPE PACKAGING:

Individual food components of each menu were vacuum packaged in polyolefin-aluminum foil-polyester pouches which for the dehydrated components also served as the reconstitution and serving vessels. The food components were packed in a formed aluminum foil container (approximately 10 x 12 x 5 inches) which had a crimped-on lid, not hermetically sealed, and which served as a water heating vessel.

COMMENTS:

Essentially, the SUM represented another of several approaches to provision of acceptable hot meals to troops in operational situations which did not demand use of individually packaged subsistence but which precluded use of the B Ration.

SMALL UNIT MEAL, 4 PERSONS (SUM)



SMALL UNIT MEAL, 4 PERSONS

MENUS:*

Breakfast

- Beef Hash
- Catsup Mix
- Crackers
- Cheese Spread
- Pineapple
- Cocoa

Dinner/Supper

- Meat Loaf/Brown Gravy
- Mashed Potatoes
- Peas
- Crackers
- Jelly
- Fruitcake

Dinner/Supper

- Chicken and Vegetables
- Applesauce
- Crackers
- Jelly
- Orange Nut Cake

Dinner/Supper

- Meat Balls/Tomato Gravy
- Rice
- Green Beans
- Crackers
- Cheese Spread
- Chocolate Pudding, Instant

*All four menus included four individual packages of instant coffee, cream substitute, and sugar; two individual packages of salt, pepper, and instant tea; four packages of cigarettes, matches, toilet paper, chewing gum, plastic beakers, scoops, plates, cups, knives, and instruction sheets.

T RATION (TRAY PACK)

DESIGNED:

To provide the Army in the field with subsistence for a combat field feeding system that will increase the potential number of high quality, nutritionally adequate hot meals, even in highly mobile situations, while reducing the manpower, fuel and water requirements for achieving this. The T Ration (Tray Pack) also offers potential for use by other Military Services.

RATION/MEAL CONSISTS OF:

Types of Components:

A variety of entree, vegetable, dessert, starch, bread, and salad items which have been heat-processed in rectangular, multiserving, half-size steam table steel pans. As is the case with the retortable pouch components of the Meal, Ready-to-Eat, Individual, the flat configuration of the tray pack offers greater quality potential for its heat-processed contents than does the round metal can because of reduced processing time to attain the end point temperature for sterility. The tray pack foods are ready-to-heat and serve. The container also functions as a heating and serving vessel. Initial concept menus envisioned that a limited number of items could be used in other than tray pack form. Soups, crackers, and beverages would be dehydrated. The T Ration also includes other items common to A and B Ration.¹¹ Bread is to be provided from a field bakery.

MENUS:

An initial concept 14-day menu cycle of three meals per day was formulated as a guide for development. Developmental progress, including test and evaluation results, is expected to provide a basis for developing firmer menus in conjunction with the US Army Troop Support Agency.

PRESENT STATUS:

Tray pack products are under development as individual line items, many of which are currently scheduled for introduction on a test basis into the military subsistence supply system. Following Force Development Testing and Experimentation to validate the combat field feeding system concept, the Army will decide whether to proceed with the development, further testing, and potential adoption of the system, including the T Ration.

PREPARED BY: Food service personnel.

¹¹ R. Byrne, et al., "A proposed combat food service concept for the Army in 1990," NATICK/TR-80/027, (Natick, MA) 1980.

T RATION (TRAY PACK)

REQUIREMENTS FOR PREPARATION:

The combat field feeding system under development for preparing the T Ration is a modular one consisting of a tactical field kitchen (TFK) comprised of a mobile food service unit (MFSU) and a supplemental field kitchen kit (SFKK). The MFSU must be operable from a prime mover or trailer, carry and store 100–120 gallons of potable water, heat T Rations on the move, and be fully operational for meal service within 10 minutes of arrival on site. It must also provide utensils for opening the trays and serving the meal and be able to collect and reduce the bulk of all trash (paperware, cans, and cups) generated from meals at forward sites. Disposable eating ware is a part of the system. When the operational situation permits, addition of the SFKK is expected to provide capability to prepare and serve some B Ration items and provide minimal sanitation for this. With consolidation of at least three TFK's, ability to prepare full B Ration, Hospital B Ration, and A Ration menus is expected. A modular system for transporting and preparing hot meals and beverages for patients in combat hospital wards is also under development.

ADVANTAGES:

With successful development and implementation of the entire system, significant improvements can be expected in the mobility, responsiveness, quality, and quantity of hot meals served to combat troops. These advantages should be accompanied by radical reduction in the time, fuel, water, and labor previously required to prepare hot meals.



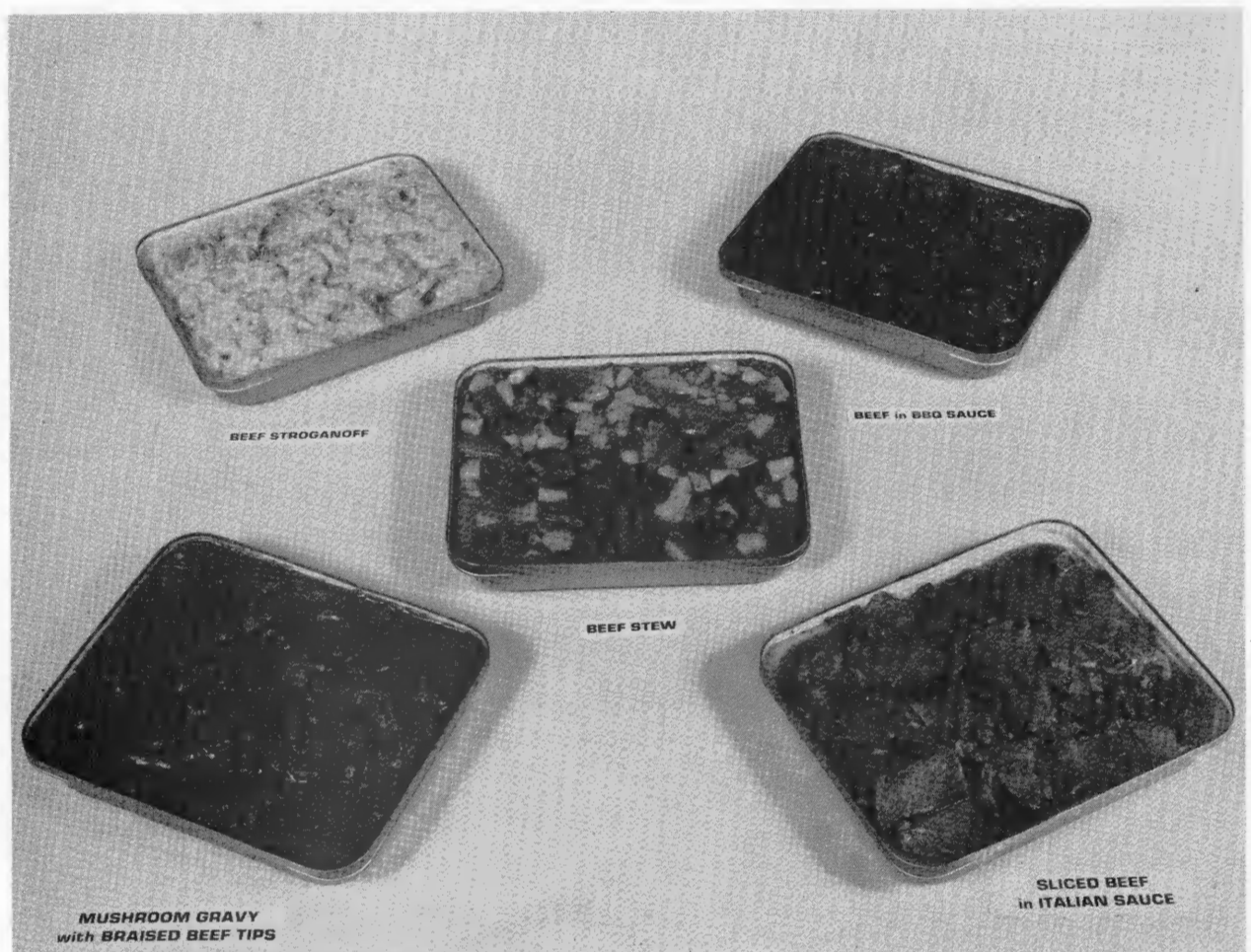
SERVING A T-RATION MEAL

SHELF LIFE:

The proponent has stated that the T Ration must have a shelf life of at least three years at 21°C (70°F).



T-RATION TRAY PACK MEAT



TYPICAL TRAY PACK ENTREES OF T-RATION

T RATION (TRAY PACK)

Projected Menu Items (98 tray pack items), March 1981:

Entrees

Bacon*
Baked Golden Chicken
Barbecued Pork
Barbecued Beef
Beans and Franks
Beef Stew
Canadian Bacon*
Chili Con Carne
Cheese Omelet*
Creamed Chip Beef*
Eggs*
Fried Chicken
Fried Shrimp
Franks in Brine
Grilled Ham*
Grilled Beef Steak
Ham Slices*
Italian Sausage
Lasagna
Meat Loaf
Pepper Steaks
Pot Roast
Roast Beef
Salisbury Steak
Sausage Patties*
Shrimp Newburgh
Sliced Veal
Sliced Turkey
Sliced Pork w/Gravy
Smoky Pork
Stuffed Peppers
Stuffed Pork Sliced
Spaghetti/Meatballs
Swiss Steak
Swedish Meat Balls

Vegetables

Baked Beans
Broccoli
Carrots
Creamed Corn
French Fried Onion Rings
Green Beans
Glazed Carrots
Lima Beans
Mixed Vegetables
Peas
Peas and Carrots
Peas w/Mushrooms and Onions
Spiced Beets
Spinach
Stewed Tomatoes
Waxed Beans
Whole Kernel Corn

*Breakfast Items

Potatoes and Starch Items

Baked Potatoes
Buttered Noodles
French Fried Potatoes
Glazed Sweet Potatoes
Spanish Rice
Potatoes/Chicken Sauce
Potatoes/Butter Sauce
Rice
Scalloped Potatoes
Macaroni and Cheese

Salads

Cauliflower Salad
Macaroni Salad
Potato Salad
3-Bean Salad

Breads

Blueberry Muffins*
English Muffins*
French Toast*

Desserts

Applesauce
Assorted Fruits in Syrup (6)*
Brownies
Cake Flavor 1
Cake Flavor 2
Cake Flavor 3
Cranberry Sauce
Cherry Nut Cake
Doughnuts
Fruit Cake
Fruit Cocktail
Orange Nut Cake
Pancakes*
Pears in Syrup
Pie Fillings (3)
Peaches in Syrup
Pudding
Pound Cake
Quick Coffee Cake*
Strawberries
Waffles*
Yeast Raised Sweet Goods*

SPECIAL OPERATIONAL SUBSISTENCE

Current

Food Packet, In-Flight, Individual

Food Packet, Long Range Patrol

Future (under development)

Food Packet, Assault

Ration, Arctic

Historical

Ration, Individual, Trail, Frigid

Ration, Isolated Site, 3 Persons

Food Packet, Individual, Assault

"M" Packet*

*Prototype

FOOD PACKET, IN-FLIGHT, INDIVIDUAL

DATE AVAILABLE FOR TROOP ISSUE: 1949 (1F-1)

NSN: 8970-01-060-2899 (10 packets per shipping box)
8970-00-163-8871 (20 packets per shipping box) (terminal item)

SPECIFICATION: MIL-F-3764

DESIGNED:

For Armed Forces personnel while on flights extending over one or more meal periods. Requirements for this food packet were established by the Air Force, which also uses this food packet as a contingency item.

On larger aircraft, special equipment is available for heating the meat and dessert items. All components can be eaten cold, however. Hot water is required for the coffee and tea.

USED BY: Armed Forces personnel.

RATION/MEAL CONSISTS OF: Canned items, cookies and accessories.

Types of components: A meat, a fruit, juice, dessert, accessory packet (candy coated chewing gum, instant coffee, instant tea, sugar, cream substitute, salt, paper napkins, can opener, interdental stimulator), towelettes, and a plastic spoon.

Calories: 1100, approximately



EARLY VERSION

FOOD PACKET, IN-FLIGHT, INDIVIDUAL

NUMBER OF MENUS: 10

PRESENT STATUS: Will be replaced by the Meal, Ready-to-Eat, Individual when it becomes available.

REQUIREMENTS FOR PREPARATION:

Water: 24 ounces per packet (two coffees and one tea in each)

Equipment: for heating hot water for coffee and tea

ADVANTAGES:

No gas-producing entrees.

DISADVANTAGES:

This food packet does not provide a balanced meal (one-third of the regulatory requirement); therefore, it is not suitable for use in lieu of a ration (three packets) for any length of time.

Serviceable shelf life of some components is incompatible with contingency stocking.

SPECIAL CRITERIA:

Design constraints: To have non-flatulence producing components.

COST: \$2.04/PZ (1 April 1981)

SHELF LIFE (various conditions):

Juice components have shorter shelf life than components common to the MCI.

SUSCEPTIBLE TO: Freezing

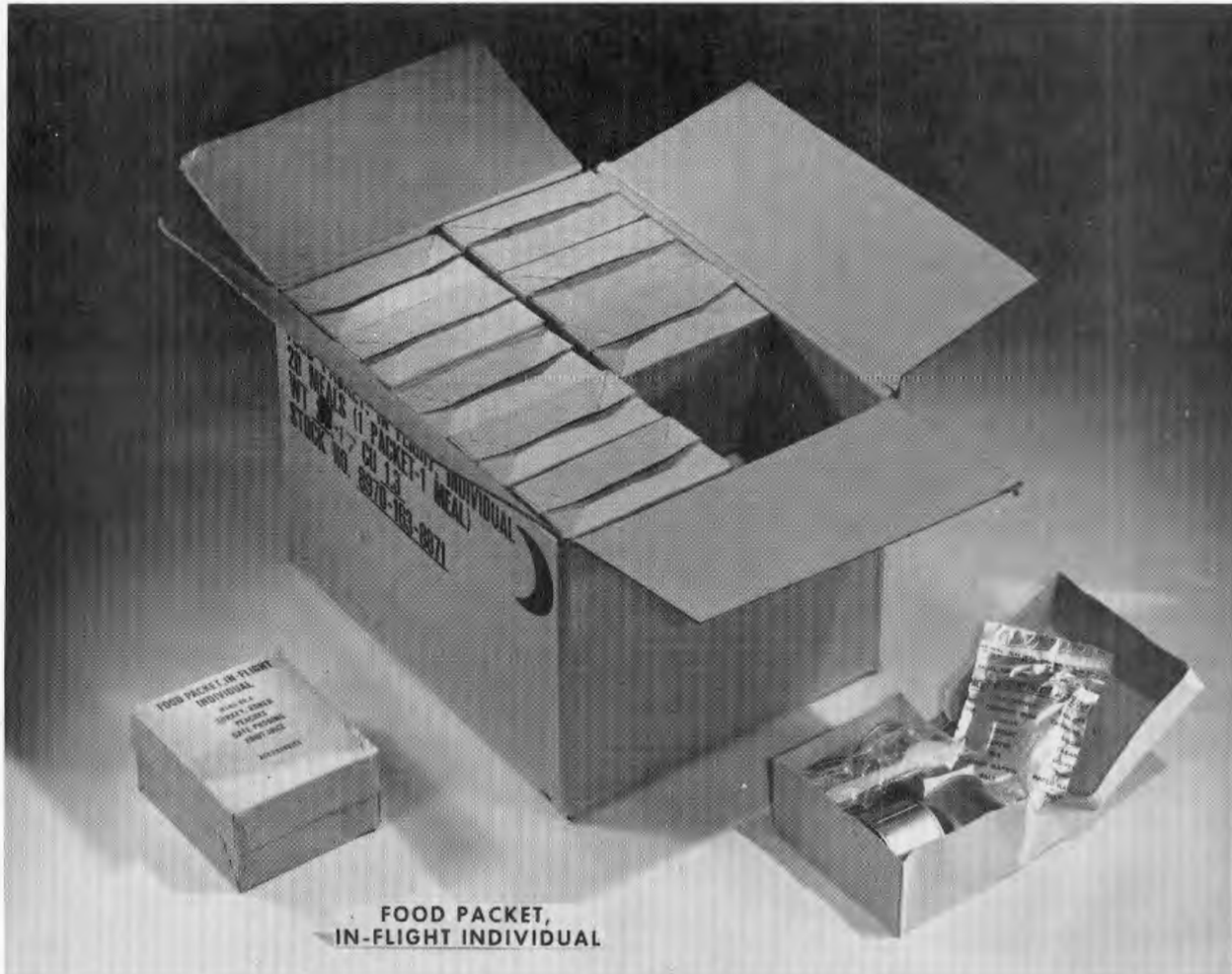
MEAL/RATION CHARACTERISTICS:

Weight/case	24 pounds (22 pounds net)
Weight/packet	2.2 pounds
Cube/case	0.63 cubic feet
Cube/packet	0.056 cubic feet
Packets/case	10

FOOD PACKET, IN-FLIGHT, INDIVIDUAL

TYPE PACKAGING:

Food components in cans and accessories in laminated bag are assembled in paperboard carton (6 x 5-1/4 x 3-1/8") and packed in a fiberboard shipping box.



FOOD PACKET,
IN-FLIGHT INDIVIDUAL

(20 PACKETS PER SHIPPING CASE
PROCURED PRIOR TO MARCH, 1978)

COMMENTS:

During the last decade (1970-80), In-Flight Food Packet components which are not common to the MCI (such as juices and sandwich cookies) have become increasingly difficult, and frequently impossible, to procure in accordance with specification requirements essential to suitability for operational ration use.

FOOD PACKET, IN-FLIGHT, INDIVIDUAL

MENUS* (MIL-F-3764F):

- Menu 1 Beef w/Spiced Sauce
Apricots
Juice, Pineapple
Chocolate Nut Roll
- Menu 2 Beefsteak
Fruit Cocktail
Juice, Grapefruit and Orange
Cookie Unit
- Menu 3 Chicken or Turkey w/Noodles
Pears
Juice, Tomato
Orange Nut Roll
- Menu 4 Chicken or Turkey, Boned
Peaches
Juice, Orange
Cake, Raisin Nut
- Menu 5 Ham and Eggs, Chopped
Peaches
Juice, Orange
Cinnamon Nut Roll
- Menu 6 Ham Sliced, Cooked w/Juices
Fruit Cocktail
Juice, Tomato
Chocolate Nut Roll
- Menu 7 Spaghetti w/Beef Chunks in Sauce
Pears
Juice, Pineapple
Fruitcake
- Menu 8 Pork, Sliced, Cooked w/Juice
Peaches
Juice, Tomato
Orange Nut Roll
- Menu 9 Tuna Fish
Fruit Cocktail
Juice, Orange
Pound Cake
- Menu 10 Turkey Loaf
Apricots
Juice, Grapefruit and Orange
Cinnamon Nut Roll

*All menus include premoistened towelettes, a plastic spoon, and an accessory packet providing instant coffee, instant tea, sugar, cream substitute, salt, candy-coated chewing gum, paper napkins, a can opener, and an interdental stimulator.

FOOD PACKET, LONG RANGE PATROL

ABBREVIATION: LRP

DATE AVAILABLE FOR TROOP ISSUE: 1964

TYPE—CLASSIFIED (date): Standard A for Army use in FY68 (as interim to the Food Packet, Individual Combat)

NSN: 8970-00-926-9222

SPECIFICATION: MIL-F-43946

DESIGNED:

For troops in operations precluding resupply for periods of two to ten days. Item has generally been issued at the rate of one or two packets/man/day.

USED BY: All Military Services (except for Marine Corps in peacetime)

RATION/MEAL CONSISTS OF:

Types of components: Each menu provides a precooked, freeze-dehydrated entree in a reconstitution package as the main component, with a confection, a cereal or fruitcake bar, coffee, cream, sugar, toilet paper, matches, and a plastic spoon. Menus 1, 4, 6, 7, and 8 also contain cocoa beverage.

Calories: Approximately 1100



FOOD PACKET, LONG RANGE PATROL

NUMBER OF MENUS: 8

PRESENT STATUS:

In continuing procurement; requisition to Defense Personnel Support Center, Philadelphia, PA 19101.

PREPARED BY: Individual consumer. Except for beverages, can be eaten as is, with drinking water.

REQUIREMENTS FOR PREPARATION:

Water: Menus 1, 4, 6, 7, and 8, which include cocoa, require 46 ounces per packet, if all components are rehydrated. Menus 2, 3, and 5 require 40 ounces per packet, if all components are rehydrated.

Equipment: Canteen cup for coffee and cocoa and useful to measure water (1/2, 1/4, or 1/3 canteen cup as appropriate).

ADVANTAGES:

Lightweight and easy to carry. Can be eaten as is or rehydrated rapidly with cold or hot water. Resistant to damage in handling and free fall delivery. Apparent high acceptability, even with prolonged consumption as the sole diet. Prolonged shelf life of major components at elevated temperatures.

DISADVANTAGES:

Bulk freeze-dried components do not reduce volume.

COST: \$2.47/PZ (1 April 1981)

SHELF LIFE (various conditions):

Although its maximum shelf life has yet to be determined, this item appears to have better keeping quality, when properly manufactured, than any other packaged ration yet developed. It has withstood three years at 38°C (100°F) with only minimal effect on serviceability.

MEAL/RATION CHARACTERISTICS:

Weight/case	36 pounds gross
Weight/packet	0.70 pounds
Cube/case	1.84 cubic feet
Cube/packet	0.046 cubic feet
Packets/case	40 (5 of each menu)

FOOD PACKET, LONG RANGE PATROL

TYPE PACKAGING:

Flexible packaging. Primary package for entrees consists of an inner polyethylene bag, which is also the reconstitution package, and an outer polyolefin-aluminum foil-polyester barrier bag. The menu packet bag is camouflage-colored polyethylene. The packets are packed in fiberboard shipping boxes.



COMMENTS:

If conditions permit, the user can prepare a familiar and acceptable hot main course in seconds simply by adding hot water. If the situation precludes stopping to heat water, the user can rehydrate the main component in about five minutes in cold water or even eat it dry with drinking water on the side.

The Food Packet, LRP, was adopted as interim to the Food Packet, Individual, Combat (see Food Packet, Assault).

FOOD PACKET, LONG RANGE PATROL

MENUS* (MIL-F-43846B):

- Menu 1 Beef Hash**
Cornflake Bar, Orange, Fortified
Cocoa Beverage Powder
- Menu 2 Chili Con Carne**
Coconut Bar, Chocolate Covered
- Menu 3 Spaghetti with Meat Sauce**
Chocolate, Enriched, Sweet with Almonds
- Menu 4 Beef with Rice**
Cornflake Bar, Lemon, Fortified
Cocoa Beverage Powder
- Menu 5 Chicken Stew**
Chocolate, Enriched, Sweet with Almonds
- Menu 6 Escalloped Potatoes with Pork**
Fruitcake Bar
Cocoa Beverage Powder
- Menu 7 Beef Stew**
Vanilla Fudge, Chocolate Covered
Cocoa Beverage Powder
- Menu 8 Chicken and Rice**
Chocolate Fudge, Chocolate Covered
Cocoa Beverage Powder

*All menus include sugar, cream substitute, and two units of instant coffee, as well as matches, toilet paper, and a plastic spoon.

FOOD PACKET, ASSAULT

DESIGNED FOR:

The Marine Corps as a lightweight, high-density, food packet for use in comparatively short, non-resupply situations (10 days; one packet/person/day).

To provide a food packet to be used as a restricted diet during assault and reconnaissance missions and other non-resupply situations. To effect significant reduction in the volume occupied by the Food Packet, Long Range Patrol. (The initial USMC requirement for this item matched the Army's earlier requirement for the Food Packet, Individual, Combat — against which the LRP was adopted as interim.)

RATION/MEAL CONSISTS OF:

Types of components:

A variety of dehydrated, compressed bars. All of the bar components have the capability of being eaten dry; many, with the addition of water, will rehydrate to a familiar entree, dessert, or beverage. Intermediate moisture meat items are added to raise the protein level. Components will be fortified as necessary.

Calories: 1981 prototype provided 1550 calories average (16% from protein, 35% from fat and 49% from carbohydrates).



FOOD PACKET, ASSAULT

NUMBER OF MENUS: 6

PRESENT STATUS: In development state. Initial prototype procurement completed.

PREPARED BY: Individual consumer.

REQUIREMENTS FOR PREPARATION:

Water: If consumed rehydrated, 1981 prototype requires 25 to 35 ounces. (Menu 1 — 27 ounces; Menu 2, 5, and 6 — 33 ounces; Menu 3 — 25 ounces; Menu 4 — 35 ounces.)

Equipment: Fuel tablets for heating water desirable.

Other: Canteen

ADVANTAGES:

Lightweight, high density foods, which are convenient to use, palatable, and may be eaten in both the dry and rehydrated state. Low moisture foods make the packet suitable for use in extreme cold climates. Prolonged shelf life is anticipated.

SPECIAL CRITERIA:

Design constraints:

Objective is that one 1981 prototype packet will provide 1400 calories and all the nutrients considered to be required for a restricted diet within a gross weight of one pound.

SHELF LIFE: Unknown

MEAL/RATION CHARACTERISTICS (1981 prototype):

Weight/case	39 pounds
Weight/packet	444 grams (packaged) (0.98 pounds)
Cube/case	1.78 cubic feet
Cube/packet	0.043 cubic feet
Packets/case	36
Dimensions	6-3/4 x 4-5/8 x 2-3/8 inches (case 18-3/4 x 12-1/8 x 12")

FOOD PACKET, ASSAULT

COMMENTS:

Each menu contains a main entree item, two cereal bars, a beverage bar, and an intermediate moisture meat item (pepperoni or beef jerky). In addition, various confectionary items are included to balance the caloric requirement.

The food packet is based on two concepts, a nutrition concept and a food technology concept. The nutrition concept provides a restricted diet in which the daily caloric intake of the soldier in the field is considerably less than his daily energy expenditure. The energy intake deficit is balanced primarily through the use of body fat, which results in an expected body weight loss. Thus the packet must provide the minimum amount of food required to maintain the user's operational effectiveness (performance), with an expected weight loss. The food technology concept responds to this by reducing weight and volume of food components through freeze-drying, compression, high caloric density foods and flexible packaging.

FOOD PACKET, ASSAULT

Menu #1

Chicken Stew
Beef Jerky
Granola Bar
Oatmeal Cookie Bar
Chocolate Bars
Vanilla Pudding
Orange Beverage

Menu #2

Beef & Veg
Pepperoni
Granola Bar
Oatmeal Bar
Caramels
Fudge Bar
Orange Beverage

Menu #3

Pork & Esc. Potatoes
Beef Jerky
Granola Bar
Oatmeal Bar
Fig Bars
Chocolate Bar
Orange Beverage

Menu #4

Chicken A la King
Beef Jerky
Granola Bar
Oatmeal Cookie Bar
Chocolate Pudding
Fig Bars
Fudge Bar
Orange Beverage

Menu #5

Chicken & Rice
Pepperoni
Granola Bar
Oatmeal Cookie Bar
Chocolate Bars
Fig Bars
Orange Beverage

Menu #6

Beef Hash
Beef Jerky
Granola Bar
Oatmeal Cookie Bar
Fig Bars
Fudge Bar
Orange Beverage

NOTES:

1. In addition to the above listed components, all meal packets will contain salt, matches, toilet paper, a spoon, and coffee, cream, and sugar.
2. Fudge bars, which are in three of the six menus, can also be used to make a hot chocolate beverage.

RATION, ARCTIC

DESIGNED:

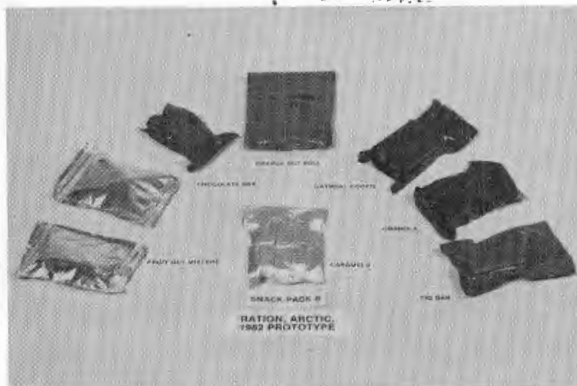
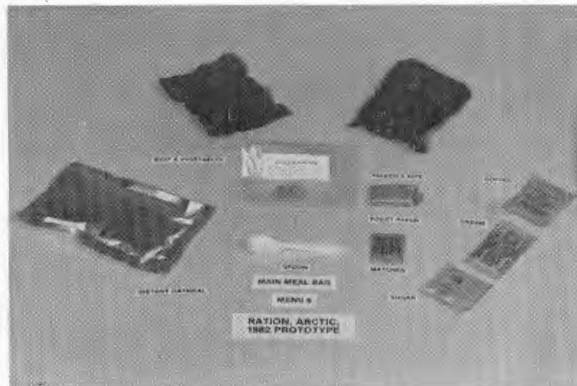
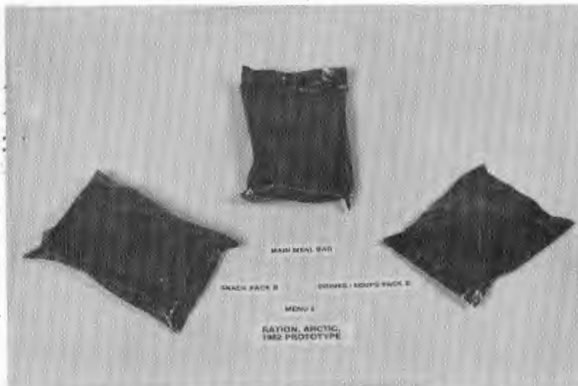
To provide the Marine Corps with lightweight, compact, high caloric subsistence for assault, reconnaissance and other non-resupply operations under frigid conditions. The prototype offers potential for use by other services as well.

RATION/MEAL CONSISTS OF:

Types of components:

Freeze dehydrated, compressed, and other low moisture foods. Initial prototypes tested in 1981 consisted of two Assault Food Packets with supplemental items. A new design, under development at the time of writing, will provide each ration in three packages: a main meal pack providing two freeze-dried compressed entree bars, oatmeal, two plastic spoons and an accessory packet (coffee, cream, sugar, matches and toilet paper); a drink/soup pack; and a snack pack (cookie bars, nut and fruit mix, candy, fig bars and a brownie or retort pouch orange nut cake). The three packages will be joined together for issue. All packaging is flexible. Twelve rations, two each of six menus, will be packed in each shipping case.

Calories: 4500, approximate



RATION, ARCTIC

NUMBER OF MENUS: 6

PRESENT STATUS: Under development

PREPARED BY: Individuals

REQUIREMENTS FOR PREPARATION:

Water: 96 ounces, of which 44 require heating, if all components are consumed rehydrated.

Equipment: Fuel tablets for heating water desirable.

Other: Canteen and canteen cup



ADVANTAGES:

Lightweight, high calorically dense foods which are convenient to use, palatable, and which may be eaten in either the dry or rehydrated state. Low moisture contents make the components suitable for use in extremely cold climates as there is virtually no moisture to freeze. Prolonged shelf life is anticipated.

SPECIAL CRITERIA:

Design constraints:

To provide sufficient calories for energy expenditure during heavy exertion in extreme cold.

To limit sodium content in accordance with recommendations from the Naval Submarine Medical Research Laboratory. Controlled cold chamber studies with the prototype ration have indicated that lower sodium level will reduce the daily water requirement and prevent symptoms of dehydration in the users.

RATION, ARCTIC

SHELF LIFE: Unknown

MEAL/RATION CHARACTERISTICS: *

Weight/case	37.0 lb
Weight/ration	2 lb 14 oz
Cube/case	1.8 cu ft
Cube/ration	234 cu in
Rations/case	12

*Estimates based on second prototype.

RATION, ARCTIC

MENUS* (second prototype):

Menu No. 1

Chicken Stew
Spaghetti w/Meat Sauce
Oatmeal (Maple and Brown Sugar Flavor)
Drink/Soup Pack
Snack Pack A

Menu No. 2

Escalloped Potatoes with Pork
Chicken a la King
Oatmeal (Apple and Cinnamon Flavor)
Drink/Soup Pack
Snack Pack B

Menu No. 3

Chicken and Rice
Beef with Vegetables
Oatmeal (Maple and Brown Sugar Flavor)
Drink/Soup Pack
Snack Pack A

Menu No. 4

Chicken Stew
Spaghetti w/Meat Sauce
Oatmeal (Apple and Cinnamon Flavor)
Drink/Soup Pack
Snack Pack B

Menu No. 5

Escalloped Potatoes with Pork
Chicken a la King
Oatmeal (Maple and Brown Sugar Flavor)
Drink/Soup Pack
Snack Pack A

Menu No. 6

Chicken and Rice
Beef with Vegetables
Oatmeal (Apple and Cinnamon Flavor)
Drink/Soup Pack
Snack Pack B

*All menus include two plastic spoons and an accessory packet providing coffee, cream, sugar, matches, and toilet paper.

The Drink/Soup Pack contains two orange beverage bars, one 10-ounce serving of chicken noodle soup mix, one 10-ounce serving of one of two flavors of fruit soup mix, two packages of cocoa beverage powder and two packages of lemon tea.

Snack Pack A contains two granola bars, two oatmeal cookie bars, two chocolate bars, two fig bars, caramels and a chocolate covered brownie.

Snack Pack B is the same as *Snack Pack A* except that it contains orange nut cake instead of a brownie.

RATION, INDIVIDUAL, TRAIL, FRIGID

DATE AVAILABLE FOR TROOP ISSUE: 1950 (test purposes)

TYPE-CLASSIFIED (date): 1952

FSN: 8970-266-7904

SPECIFICATION: MIL-R-35005

DESIGNED FOR:

Individuals on the trail under cold weather conditions. All components except dehydrated soups and beverages could be eaten without preparation. This ration was intended for use by members of small patrols or trail teams for short periods of time in cold conditions where resupply was not feasible.

USED BY: Test use by Army

RATION/MEAL CONSISTS OF:

Types of components:

Concentrated, calorically dense foods not readily susceptible to freezing and suitable for use under extreme cold. (Canned foods were excluded from initial versions for this reason. Initially the ration's only meat components were two meat bars. Canned precooked bacon, subsequently replaced by canned ham, and canned processed cheese were added later.)

Calories: 4400



RATION, INDIVIDUAL, TRAIL FRIGID

RATION, INDIVIDUAL, TRAIL, FRIGID

PRESENT STATUS: Cancelled 6 July 1965. Item was procured primarily for test purposes.

PREPARED BY: Individual consumer.

REQUIREMENTS FOR PREPARATION:

Water: 72 to 78 fluid ounces per man per day if all soups and beverages were consumed.

ADVANTAGES:

Minimum in weight and cube with technology then available. The cereal blocks, fruitcake bars, meat bars, and candy components were considered especially adaptable to trail consumption. Inclusion of several condiments in the single menu provided gave flexibility in component preparation.

DISADVANTAGES:

Selection of components on basis of nutrient density and ease of use in extreme cold limited acceptability.

The canned cheese became hard and difficult to chew under extreme cold, necessitating instructions that it be removed from the pack, placed in a bag, and kept close to the body for consumption on the trail.

SPECIAL CRITERIA:

Design constraints:

Components suitable for consumption on the trail under extreme cold.

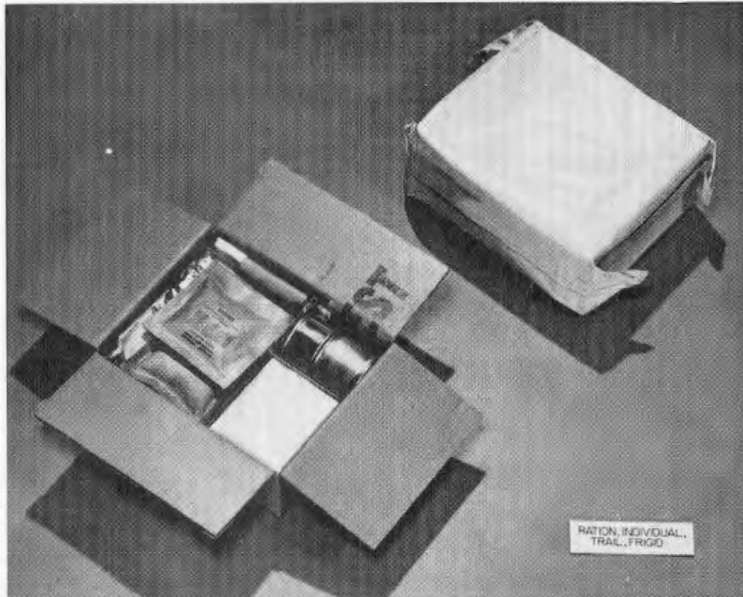
MEAL/RATION CHARACTERISTICS:

Weight/case	34 pounds (approximately)
Weight/packet	4 pounds (approximately)
Rations/case	8

RATION, INDIVIDUAL, TRAIL, FRIGID

TYPE PACKAGING:

Flexible packaging which could be opened by personnel wearing protective gloves. Two canned items (cheese and ham) were also included.



COMMENTS:

This ration was never routinely procured and stocked. It was packed in a corrugated box inclosed in a waterproof bag. In addition to food components, the ration pack provided non-woven fabric to clean cooking and eating utensils, a can opener, toilet paper, water purification tablets, matches, cigarettes, a menu sheet, and a plastic bag.

RATION, INDIVIDUAL, TRAIL, FRIGID

MENUS (MIL-R-35005):

Breakfast

- Cereal Bars
- Canned Fried Ham
- Crackers
- Coffee
- Cream Substitute
- Sugar, Granulated

Dinner

- Canned Cheese
- Mixed Candies
- Fruitcake Bars
- Cocoa Beverage Powder
- Sugar, Granulated

Supper

- Soup
- Meat Bar
- Soup and Gravy Base
- Onions, Dehydrated
- Chili Powder Seasoning
- Tea
- Cream Substitute
- Sugar, Granulated
- Crackers

Accessory Items

- Gum
- Chocolate Coated Raisins
- Chocolate Bars
- Imitation Beverage Base

RATION, ISOLATED SITE, 3 PERSONS

DATE AVAILABLE FOR TROOP ISSUE: 1965

TYPE—CLASSIFIED (date): Not applicable (Air Force sole user)

SPECIFICATION: LP/P DES 35—65 (19 March 1965)

DESIGNED FOR:

Personnel at small, isolated Air Force sites with little or no food preparation or freezer capability.

USED BY: Air Force

RATION/MEAL CONSISTS OF:

Commercially canned meats, fish, and vegetables. Components from the MCI were also used, such as, beans and frankfurter chunks, desserts, and candies, as well as B Ration components, such as, tuna fish and beef and gravy.

NUMBER OF MENUS: Eight; each menu contained one breakfast, dinner, and supper for three persons.

PRESENT STATUS: Obsolete (specification cancelled 20 March 1974).

PREPARED BY: Individual consumers.

REQUIREMENTS FOR PREPARATION:

Equipment: Mess kits for heating.

ADVANTAGES:

Ration was nutritionally balanced and easy to prepare (although time and limited skill or motivation were needed to follow directions for such components as sauces and soups).

DISADVANTAGES:

Ration contained commercial products which were not always available, making it difficult to procure. Substitutions were necessary for each procurement.

MEAL/RATION CHARACTERISTICS:

Weight/case	18.7 pounds
Cube/case	0.75 cubic feet
Rations/case	3

COMMENTS:

The components were assembled into eight menus, each containing one breakfast, one dinner, and one supper for three persons. It provided meals comparable to those of the B Ration, but only those which were easy to prepare. Instructions were printed on the labels.

RATION, ISOLATED SITE, 3 PERSONS

MENUS (LP/P DES 35-65):

MENU 1

Breakfast

Peaches
Fried Ham and Eggs
Cocoa Beverage Powder
Coffee, Cream Substitute, Dry, Sugar

Cereal Blocks
Peanut Butter
Bread

Dinner

Beef Steak with Gravy
Tomatoes
Pound Cake
Milk
Coffee, Cream Substitute, Dry, Sugar

Mashed Potatoes
Bread
Jam

Supper

Salmon
Peas
Cheese Spread
Vanilla Cream Discs
Coffee, Cream Substitute, Dry, Sugar

Potato Sticks
Bread
Pineapple

MENU 2

Breakfast

Fruit Cocktail
Bacon
Bread
Coffee, Cream Substitute, Dry, Sugar
Cocoa

Beans with Pork
Jam

Dinner

Ham Chunks with Gravy
Mashed Potatoes
Bread
Cookies
Coffee, Cream Substitute, Dry, Sugar

Corn
Jam
Milk

Supper

Tomato Vegetable Soup
Ground Meat with Spaghetti
Bread
Fruit Cake
Milk
Coffee, Cream Substitute, Dry, Sugar

Green Beans
Cheese Spread

RATION, ISOLATED SITE, 3 PERSONS

MENUS:

MENU 3

Breakfast

Orange Juice	
Fried Luncheon Meat	Cereal Bars
Pecan Roll	
Cocoa	
Coffee, Cream Substitute, Dry, Sugar	

Dinner

Pea Soup	
Ham and Lima Beans	Applesauce
Crackers	
Date Pudding	
Coffee, Cream Substitute, Dry, Sugar	

Supper

Turkey Loaf with Gravy	
Potato Sticks	Tomatoes
Bread	Jam
Pineapple	
Chocolate Fudge Discs	
Coffee, Cream Substitute, Dry, Sugar	

MENU 4

Breakfast

Pears	
Fried Ham	Beans with Pork
Bread	Jam
Cocoa	
Coffee, Cream Substitute, Dry, Sugar	

Dinner

Beef with Gravy	
Corn	
Bread	Jam
Chocolate Discs	
Pound Cake	
Coffee, Cream Substitute, Dry, Sugar	

Supper

Pork Steaks with Gravy	
Mashed Potatoes	Applesauce
Bread	Jam
Chocolate Nut Roll	
Milk	
Coffee, Cream Substitute, Dry, Sugar	

RATION, ISOLATED SITE, 3 PERSONS

MENUS:

MENU 5

Breakfast

Grapefruit Juice
Fried Bacon
Pecan Roll
Cocoa
Coffee, Cream Substitute, Dry, Sugar

Beans with Pork

Dinner

Chicken with Gravy
Potato Sticks
Bread
Vanilla Pudding
Milk
Coffee, Cream Substitute, Dry, Sugar

Green Beans
Jam
Chocolate Sauce

Supper

Onion Soup
Beefsteak and Potatoes
Bread
Cookies
Coffee, Cream Substitute, Dry, Sugar

Peas
Peanut Butter

MENU 6

Breakfast

Orange Juice
Fried Corn Beef Hash
Bread
Milk
Coffee, Cream Substitute, Dry, Sugar
Fruit Tablet

Oatmeal
Jam

Dinner

Mushroom Soup
Tuna Fish
Rice
Bread
Chocolate Nut Roll
Coffee, Cream Substitute, Dry, Sugar

Peas
Jam

Supper

Meatballs and Beans
Bread
Peaches
Butterscotch Pudding
Milk
Coffee, Cream Substitute, Dry, Sugar

Corn
Jam
Coconut Disc

RATION, ISOLATED SITE, 3 PERSONS

MENUS:

MENU 7

Breakfast

Applesauce	
Fried Pork Sausage Links	Malted Cereal Granules
Bread	Peanut Butter
Milk	
Coffee, Cream Substitute, Dry, Sugar	

Dinner

Spiced Beef w/Sauce	
Mashed Potatoes (Gravy)	Tomatoes
Bread	Jam
Date Pudding	
Milk	
Coffee, Cream Substitute, Dry, Sugar	

Supper

Chicken Noodle Soup	
Beans with Frankfurters	
Crackers	Cheese Spread
Orange Nut Roll	
Chocolate Discs	
Coffee, Cream Substitute, Dry, Sugar	

MENU 8

Breakfast

Pineapple Juice	
Fried Bacon	Scrambled Eggs
Bread	Cheese Spread
Cocoa	
Coffee, Cream Substitute, Dry, Sugar	

Dinner

Shrimp with Curry Sauce	
Rice	Lima Beans
Bread	Jam
Chocolate Pudding	
Milk	
Starch Jelly Bars	
Coffee, Cream Substitute, Dry, Sugar	

Supper

Chili Con Carne	Kidney Beans
Crackers	Cheese Spread
Apricots	
Coffee, Cream Substitute, Dry, Sugar	

FOOD PACKET, INDIVIDUAL, ASSAULT

ABBREVIATION: Assault Food Packet

DATE AVAILABLE FOR TROOP ISSUE: 1950

FSN: 8970-194-4001

SPECIFICATION: MIL-F-1034

DESIGNED FOR:

To provide individuals with a lightweight food unit to bridge the gap between beginning of actual combat and restoration of normal supply functions.

USED BY: Army and Marine Corps during assault landings.

RATION/MEAL CONSISTS OF:

Types of components:

Each food packet consisted of a canned meat unit, a canned B-Unit (crackers and a cookie; earlier versions contained canned bread), an accessory packet (cigarettes, matches, toilet paper, candy, chewing gum, coffee, sugar, a can opener, water purification tablets, and dry, sweetened milk product), a plastic spoon, and fuel tablets. The fuel tablets and water purification tablets were subsequently deleted, and the milk product was replaced by dry cream.

Calories: 800 (average)



FOOD PACKET, INDIVIDUAL, ASSAULT

FOOD PACKET, INDIVIDUAL, ASSAULT

NUMBER OF MENUS: 8

PRESENT STATUS: No longer authorized for procurement. Specification was cancelled in 1961.

PREPARED BY: Individual consumer.

REQUIREMENTS FOR PREPARATION:

No preparation except to add water to coffee.

Equipment: Fuel tablets if heating was desired.

ADVANTAGES:

Lightweight and compact within the capability of the technology available at that time (1950).

DISADVANTAGES:

Frequently misused, either in lieu of a ration where the situation permitted a complete ration, or partially consumed as a supplement.

SHELF LIFE: Essentially the same as that of the MCI.

SUSCEPTIBLE TO/DAMAGED BY: Repeated freezing and thawing.

MEAL/RATION CHARACTERISTICS:

Weight/case	29 pounds
Weight/packet	1.1 pounds
Cube/case	1.1 cubic feet
Packets/case	24 (3 of each of 8 menus)

TYPE PACKAGING:

Metal cans and accessory items in cartons, assembled in fiberboard shipping cases.

COMMENTS:

The purpose this item was to serve was misunderstood several times throughout its development and use. Although historically it was considered to have replaced the Assault Lunch (candies, nuts, gum, dried fruit, cigarettes, and matches) designed late in World War II, it was often viewed as a replacement for the K Ration and criticized for not being a complete ration or meal.

FOOD PACKET, INDIVIDUAL, ASSAULT

MENUS (MIL-F-1034A and Amend. 2):*

No. 1

Meat and Corn

No. 3

Ham and Eggs

No. 5

Chicken (boned)

No. 7

Sausage Patties

No. 2

Beef Steak

No. 4

Hamburgers (w/o Gravy)

No. 6

Beans with Pork

No. 8

Pork Steak

*All menus included a:

B-Unit (crackers and an oatmeal cookie)

Accessory Packet (candy, gum, coffee, cream, sugar, can opener, matches, cigarettes, and toilet paper)

Plastic Spoon

"M" PACKET

DESIGNED FOR:

Individuals, to provide a small, lightweight food packet of high-caloric content for limited use over periods of normally two to ten days to meet the needs of special feeding situations of combat (including initial assault stages) and for special operations. This item was intended to replace the Food Packet, Long Range Patrol and to meet requirements for the Food Packet, Individual, Combat (potentially, also for the MRE) by using prototype MRE components.

RATION/MEAL CONSISTS OF:

Types of components:

Each menu provided two flexibly packaged meat components (MRE prototypes), with a cereal, dessert, or candy component, and coffee, cream, and sugar.

Calories: 1200

NUMBER OF MENUS: 6

PRESENT STATUS:

Prototype failed; Food Packet, Long Range Patrol was adopted as Standard A; development of the M Packet was cancelled, and MRE development was allowed to continue.

PREPARED BY: Individual consumer.

REQUIREMENTS FOR PREPARATION:

No preparation except to add cold water to beverage components and heat meat components if desired.

Water: 8 ounces for coffee

DISADVANTAGES:

The packet was not nutritionally balanced.

SPECIAL CRITERIA:

Essentially those of the LRP.

"M" PACKET

MEAL/RATION CHARACTERISTICS:

Weight/case	32.5 pounds
Weight/packet	17.9 ounces (average)
Cube/case	1.22 cubic feet
Cube/packet	46.5 cubic inches
Packets/case	24 (four each of six menus)

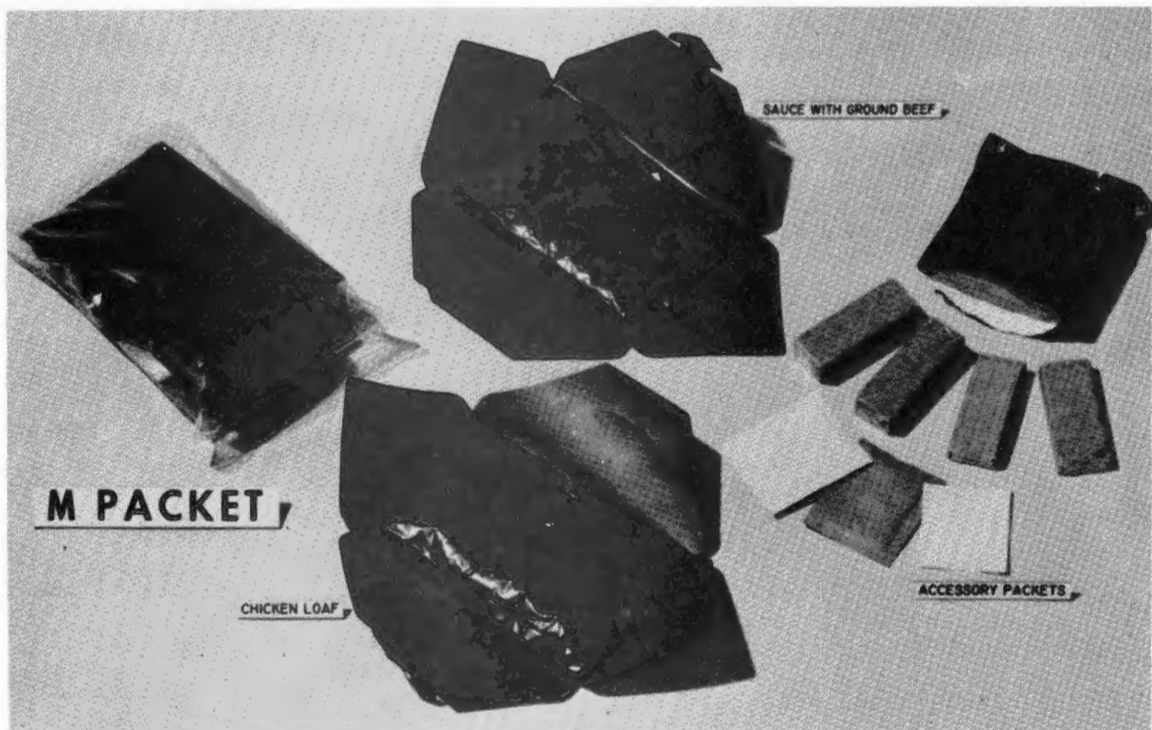
TYPE PACKAGING:

Flexibly packaged, heat-processed meat components overpackaged in a paperboard folder and packaged with other components in a heat-sealed polyethylene bag.

COMMENTS:

This was a prototype packet which never went beyond the prototype stage. Development was cancelled after it failed ET/ST* (deficiency in safety and shortcomings in acceptability and freefall delivery).

*Engineering Testing/Service Testing



1965 PROTOTYPE

"M" PACKET

MENUS (1966 ET/ST prototype):

Menu 1:

- Frankfurters
- Beef Stew
- Chocolate Bar w/Almonds (2)
- Starch Jelly Bar
- Fruit Flavored Candy Tablets
- Coffee Whitener
- Sugar
- Coffee

Menu 3:

- Beef Steak
- Beef Slices w/Barbeque Sauce
- Fruitcake
- Fruit Flavored Candy Tablets
- Chocolate Bar w/Almonds (2)
- Coffee Whitener
- Sugar
- Coffee

Menu 5:

- Chicken Loaf
- Ground Beef in Sauce
- Fruit Cereal Bars (2)
- Chocolate Bar w/Almonds (1)
- Coffee Whitener
- Sugar
- Coffee

Menu 2:

- Pork Sausage
- Ground Beef in Sauce
- Fruit Cereal Bars (2)
- Chocolate Bar w/Almonds (1)
- Coffee Whitener
- Sugar
- Coffee

Menu 4:

- Chicken Loaf
- Pork Sausage
- Date Pudding
- Fruit Flavored Candy Tablets
- Coffee Whitener
- Sugar
- Coffee

Menu 6:

- Frankfurters
- Beef Slices w/Barbeque Sauce
- Chocolate Fudge Bar
- Starch Jelly Bar
- Fruit Flavored Candy Tablets
- Coffee Whitener
- Sugar
- Coffee

SURVIVAL SUBSISTENCE

Current

Food Packet, Survival, Abandon Ship

Food Packet, Survival, Aircraft, Life Raft

Food Packet, Survival, General Purpose

Historical

Food Packet, Survival, Arctic, SA

Food Packet, Survival, Tropic, ST

Food Packet, Survival, Abandon Aircraft

FOOD PACKET, SURVIVAL, ABANDON SHIP

DATE AVAILABLE FOR TROOP ISSUE: 1952

NSN: 8970-00-299-1395

SPECIFICATION: MIL-F-16895

DESIGNED FOR:

Personnel required to abandon ship, to sustain life until rescue or until other food is available. It is supplied to lifesaving craft aboard ships. This food packet was designed for the Navy as a result of experience with ocean disasters which showed that other supplies, such as lifesaving equipment and drinking water, were more critical to survival than food.

USED BY: Navy

RATION/MEAL CONSISTS OF:

Types of components: Fifteen cartons, each providing candy, candy coated chewing gum, and matches; and one cigarette packet (two units of 20 cigarettes each).

Calories: 475, approximately.



NUMBER OF MENUS: 1

PRESENT STATUS: Routine procurement.

PREPARED BY: No preparation necessary except opening of packages.

FOOD PACKET, SURVIVAL, ABANDON SHIP

ADVANTAGES:

Provides sufficient carbohydrates to prevent the effects of ketosis and acidosis which occur with starvation due to the metabolism of body fat. Designed for use with water limitation.



DISADVANTAGES:

Provides no protein, minerals or vitamins, and thus is strictly a short-time survival food. Calories are limited.

SPECIAL CRITERIA:

Design constraints:

Food components compatible with potable water restriction. Special packaging to fit in storage areas of lifesaving craft. Assurance of edibility after exposure to one month at 60°C (140°F).

COST: \$6.03 per carton (1 April 1981) (\$0.402 each)

SHELF LIFE (various conditions):

The components have maximum stability for storage in on-deck craft under all climatic conditions. Starch jelly bars are formulated to be stable at 60°C (140°F) for one month and thus meet the Navy requirement for all survival rations.

FOOD PACKET, SURVIVAL, ABANDON SHIP

SUSCEPTIBLE TO/DAMAGED BY:

Not damaged by freezing, heat, insects, rodents, humidity, puncture or breakage; when cased.

MEAL/RATION CHARACTERISTICS:

Weight/case	48 pounds
Weight/carton	5.75 pounds
Weight/food packet	5.2 ounces
Cube/case	1.36 cubic feet
Cube/carton	0.16 cubic feet
Cube/food packet	17 cubic inches
Packets/carton	15 food packets and one cigarette packet (40 cigarettes)
Cartons/case	8

COMMENTS:

Canned water in limited quantities or water-making equipment is also provided on the life-saving craft.

MENU (MIL-F-16895E and Amend 1):

2 — 2-oz Starch Jelly Bars	4 — Lozenges (Mint Tablets)
2 — Chewing Gum Tablets	Matches

FOOD PACKET, SURVIVAL, AIRCRAFT, LIFE RAFT

NSN: 8970-01-028-9406

SPECIFICATION: MIL-F-15381

DESIGNED FOR:

Personnel surviving aircraft disasters, to sustain life for a short period while awaiting rescue or until other food is available. It is supplied to kits and life rafts carried aboard naval aircraft and must fit into extremely limited space with other emergency supplies.

USED BY: Navy

RATION/MEAL CONSISTS OF:

Types of components:

Fruit flavored candy tablets, candy coated chewing gum, a polyethylene bag, twine, and an instruction sheet pertaining to use of the bag and twine for holding components after the package is opened.

Calories: 300 approximately (all carbohydrate).



FOOD PACKET, SURVIVAL,
AIRCRAFT, LIFE RAFT

FOOD PACKET, SURVIVAL, AIRCRAFT, LIFE RAFT

PRESENT STATUS: Routine procurement.

PREPARED BY: No preparation necessary except opening of packages.

ADVANTAGES:

Provides sufficient carbohydrates to prevent the effects of ketosis and acidosis which occur with starvation due to the metabolism of body fat. Designed for use with water limitation.

DISADVANTAGES:

Provides no protein, minerals or vitamins, thus is strictly a short-time survival food. Calories are limited. (Although this food packet at one time included fruit flavored tablets fortified with ascorbic acid and mint tablets, procurement of this variety, particularly in view of the small quantity obtained annually, became impracticable.)

SPECIAL CRITERIA:

Design constraints:

Stringent requirements: Packet must withstand extreme temperature changes; be of minimum weight and cube; and consist of food which will be suitable even when water supply is severely critical. Must withstand temperatures up to 71°C (160°F).

COST: \$0.78/PZ (1 April 1981)

SHELF LIFE (various conditions):

Withstands extreme temperature changes with temperatures up to 71°C (160°F).

MEAL/RATION CHARACTERISTICS:

Weight/case	8 pounds (gross)
Weight/packet	3.5 ounces
Cube/case	0.24 cubic feet
Cube/packet	12 cubic inches
Packets/case	36 per shipping box

FOOD PACKET, SURVIVAL, GENERAL PURPOSE

ABBREVIATION: General Purpose

DATE AVAILABLE FOR TROOP ISSUE: 1963-1964

TYPE-CLASSIFIED (date): 1961

NSN: 8970-00-082-5665

SPECIFICATIONS: MIL-F-43231

DESIGNED FOR:

Personnel in any survival situation, under all environmental conditions, including those where potable water is limited. It is capable of meeting the minimum food requirement of an individual doing hard physical labor for at least 48 hours under any such conditions.

USED BY: All Military Services.

RATION/MEAL CONSISTS OF:

Types of components:

Formulated food bars, chicken flavored soup and gravy base, instant coffee, and sugar. Instructions for use are lithographed on the can and an opener is taped to the top of the can.

Calories: 870 (approximately).

Special nutrients: See design constraints.

NUMBER OF MENUS: 1

PRESENT STATUS: In routine procurement.

PREPARED BY: The individual consumer.

REQUIREMENTS FOR PREPARATION:

No preparation required except opening of packages and addition of water to coffee and soup and gravy base where the situation permits this.

Water: 16 ounces (8 ounces coffee and 8 ounces soup and gravy base)

Equipment: None

FOOD PACKET, SURVIVAL, GENERAL PURPOSE

ADVANTAGES:

Unique nutritional design assures maximum suitability for survival use even with water limitation. Withstands extreme temperatures.

DISADVANTAGES:

Special nutrient formulation of food bars, with uniform, controlled protein content, makes procurement of the limited amounts in which this item is bought difficult.

SPECIAL CRITERIA:

Design constraints:

Weight, space and water limitation are critical for this food packet, which must also withstand at least three years of dry storage and one month at 60°C (140°F). The protein content of these bars is rigidly controlled so that the food packet conserves body water yet assures maximum value from protein at any level of consumption.¹² Provision of a small amount of salt, principally in the soup and gravy base component, further contributes to conservation of body water.¹³ Instructions for use (see below) advise survivors who have already ingested salt from the sea not to consume this item. This unique nutritional design allows the adjustment of issue and consumption to anticipated needs.

It is designed to provide:

- a maximum of 7 to 8% total calories as protein
- a minimum of 75 to 100 grams of carbohydrates
- approximately 4.5 grams of sodium chloride (soup and gravy base component is principal source)

Average for the ration:

- 8% protein
- 28% fat
- 64% carbohydrates

Each of the four bar components complies with the protein and carbohydrate design. This assures the maintenance of nutritional integrity even when components are traded among survivors. The soup and gravy base component provides sodium chloride; however, instructions lithographed on the can as guidance on consuming the components advise survivors who are exposed to salt spray or who have swallowed salt water not to use soup and gravy base.

¹² D. H. Calloway and H. Spector, "Nitrogen balance as related to caloric and protein intake in active young men," *Am. J. Clin. Nutr.*, Vol. 2, No. 6., 405-412, 1954.

¹³ D. H. Calloway, "Nutritional aspects of the all-purpose survival ration: A critical appraisal," *US Armed Forces Med. J.*, Vol. II, pp 403-416, 1960.

FOOD PACKET, SURVIVAL, GENERAL PURPOSE

COST: \$2.29/PZ (1 April 1981)

SHELF LIFE (various conditions):

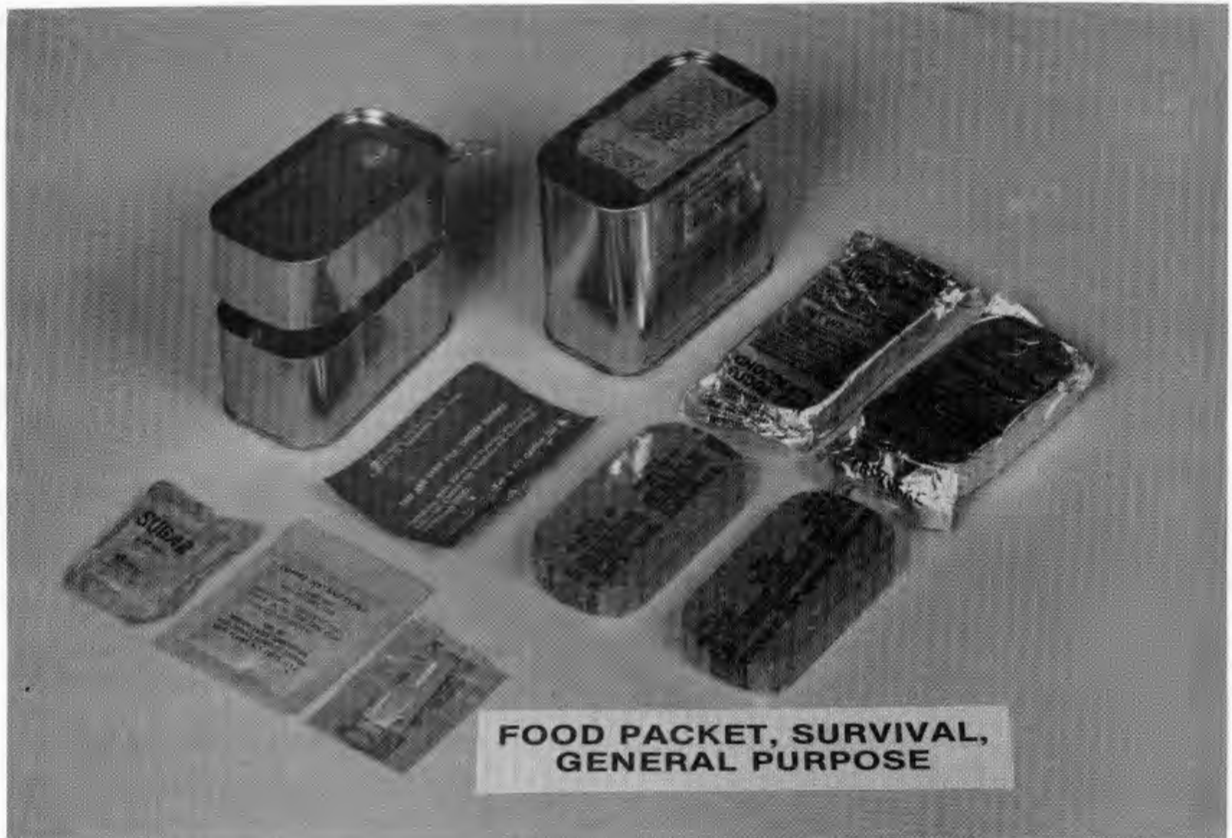
Bars must be stable for a minimum of three years dry storage and capable of withstanding continuous storage at a constant 60°C (140°F).

MEAL/RATION CHARACTERISTICS:

Weight/case	20 pounds
Weight/packet	12 ounces
Cube/case	0.43 cubic feet
Cube/packet	26.7 cubic inches
Packets/case	24

TYPE PACKAGING:

Bars packaged in a 12-ounce rectangular can (key-opening type), with a can opener taped to the can.



FOOD PACKET, SURVIVAL, GENERAL PURPOSE

COMMENTS:

This food packet is capable of, and suited to, consumption under all climatic conditions and storage under conditions of extreme temperatures and humidity, as may be encountered in aircraft operating over both arctic and tropic regions.

It is the only survival packet designed to support at least limited operational capability for survivors. It replaced other survival food packets in the system (ST and SA) except for those designed for both specific space constraints and water limitation (Abandon Ship and Life Raft, Aircraft).

MENU (MIL-F-43231 and Amend 2):

Cornflake Bar (1)

Fruitcake Bar (2)

OR

Cereal Bar, Granola (1)

Chocolate Fudge Bar (1)

Rice Cornflake Bar (1)

Coffee, Instant (1)

Sugar, Granulated (1)

Bouillon (Soup and Gravy Base) – Chicken Flavored (1)

Can Opener, Folding (1)

FOOD PACKET, SURVIVAL, ARCTIC, SA

ABBREVIATION: SA

DATE AVAILABLE FOR TROOP ISSUE: 1950

FSN: 8970-163-8869

SPECIFICATION: MIL-F-2413

DESIGNED FOR:

One man for one day in emergency aircraft landings, ditchings, or parachute landings in Arctic regions.

USED BY: Air Force and Navy

RATION/MEAL CONSISTS OF:

Types of components:

Food packet was composed principally of concentrated food bars: premixed cereal, fruitcake, cheese, and sweet chocolate, with a starch jelly bar; tea, coffee, sugar, cream, water purification tablets, and a polyethylene bag for unused components. Instructions for use were lithographed on the can.

Calories: 2000, approximate



FOOD PACKET SURVIVAL, ARCTIC, SA
1962 DATE OF PACK

FOOD PACKET, SURVIVAL, ARCTIC, SA

NUMBER OF MENUS: 1

PRESENT STATUS:

Obsolete. Replaced by Food Packet, Survival, General Purpose. Specification was cancelled in 1964.

PREPARED BY: Individual consumer (no preparation necessary other than heating water).

REQUIREMENTS FOR PREPARATION:

Water: 24 ounces for coffee and tea

Equipment: Means for heating water

ADVANTAGES:

High caloric density.

DISADVANTAGES:

Protein content too high for conservation of body water when drinking water was limited. Fruit bars (high moisture) darkened when held at high temperatures (38°C or above).

SPECIAL CRITERIA/DESIGN CONSTRAINTS:

Configuration and size of can were prime factors in determining component selection.

MEAL/RATION CHARACTERISTICS:

Weight/case	34 pounds
Weight/packet	1.34 pounds
Cube/case	0.8 cubic feet
Cube/packet	45 cubic inches
Packets/case	24

FOOD PACKET, SURVIVAL, ARCTIC, SA

TYPE PACKAGING:

Flat rectangular can 6-5/8 x 4-1/8 x 1-5/8 inches, with a can opener taped to the bottom.



FOOD PACKET, SURVIVAL, ARCTIC, SA

MENU (MIL-F-2413A and Amend 1):

Compressed cereal bars (2)

Fruitcake bars (2)

Compressed cheese bars (2)

Enriched sweet chocolate bars (3)

Starch jelly bar (1)

Coffee (1)

Tea (2)

Chewing gum tablets (3)

Sugar tablets (3)

Cream (1)

Polyethylene bag (1)

Water purification tablets (1)

FOOD PACKET, SURVIVAL, TROPIC, ST

ABBREVIATION: ST

DATE AVAILABLE FOR TROOP ISSUE: 1949

FSN: 8970-163-8870

SPECIFICATION: MIL-F-2409

DESIGNED FOR:

One man for three days or three men for one day in emergency aircraft landings or ditchings or emergency parachute landings in tropical areas.

USED BY: Air Force

RATION/MEAL CONSISTS OF:

Types of components:

Starch jelly bars, instant coffee, instant tea, chewing gum, water purification tablets, and vitamin tablets. Instructions were lithographed on the cans.

Calories: 1750, approximately

NUMBER OF MENUS: 1

PRESENT STATUS: Obsolete. Replaced by Food Packet, Survival, General Purpose.

PREPARED BY: No preparation necessary except for opening of packages and addition of water to the beverage mixes.

REQUIREMENTS FOR PREPARATION:

Water: 48 ounces for coffee and tea

Equipment: Method of heating water desirable.

ADVANTAGES:

Suitable for consumption with water limitation. Food components were stable. Low cost.

DISADVANTAGES:

No protein or minerals provided and thus was suitable for limited use only. Water purification tablets and vitamin tablets did not have effective shelf life equivalent to that of food components.

FOOD PACKET, SURVIVAL, TROPIC, ST

SPECIAL CRITERIA/DESIGN CONSTRAINTS:

For consumption only in emergencies, when water was limited.

MEAL/RATION CHARACTERISTICS:

Weight/case	37 pounds
Weight/packet	1.5 pounds
Cube/case	0.8 cubic feet
Cube/packet	45 cubic inches
Packets/case	24

TYPE PACKAGING:

Flat rectangular can 6-5/8 x 4-1/8 x 1-5/8 inches, with a can opener taped to the bottom.



1962 DATE OF PACK

FOOD PACKET, SURVIVAL, TROPIC, ST

MENU (MIL-F-2409B):

Starch jelly bars (8)

Coffee (3)

Tea (3)

Candy coated chewing gum (packets) (3)

Sugar tablets (4)

Water purification tablets (1)

Vitamin capsules or tablets (3)

FOOD PACKET, SURVIVAL, ABANDON AIRCRAFT

ABBREVIATION: SAC PAC; Ration, Special, Survival

DATE AVAILABLE FOR TROOP ISSUE: 1951

FSN: 8970-753-6246

SPECIFICATION: MIL-F-35055

DESIGNED FOR:

Personnel in escape and evasion situations after evacuation of long range aircraft. The food packet was used in training and indoctrination at the Air Force Survival Training School.

USED BY: Air Force (Strategic Air Command)

RATION/MEAL CONSISTS OF:

Types of components:

Concentrated food bars (high fat, high caloric meat food product bars, cereal bars, fruitcake bars), chili seasoning powder, onion powder, coffee, tea, sugar tablets, a recipe sheet, and a can opener. These components were furnished in two cans, a 610 x 402 x 110 can and a 312 x 115 x 310 can, called parts 1 and 2, respectively.

Calories: 3475 approximately

Special nutrients: High fat, protein, and calories.

NUMBER OF MENUS: 1

PRESENT STATUS: No longer authorized for procurement. Specification cancelled 9 November 1977.

PREPARED BY: Individual consumer.

REQUIREMENTS FOR PREPARATION:

Bars could be eaten without preparation or browned or made into gruel by the addition of water and the onion powder and chili seasoning components. From a physiological standpoint, it was necessary that adequate water be consumed with the food packet.



FOOD PACKET, SURVIVAL, ABANDON AIRCRAFT

Equipment: None required. Meat bars heated when preferred.

ADVANTAGES:

Compact, high caloric, concentrated ration. Approximately 3475 calories were provided in relatively little space.

DISADVANTAGES:

This ration was not suitable for consumption under conditions where drinking water was limited. Consumption would increase body water excretion.

COST: High, due to dehydrated meat bars.

MEAL/RATION CHARACTERISTICS:

Weight/case	26 pounds
Weight/packet	34 ounces (Part 1 — 21.5 ounces; Part 2 — 12.5 ounces)
Cube/case	0.7 cubic feet
Cube/packet	71.3 cubic inches (Part 1 — 45 cubic inches; Part 2 — 26.3 cubic inches)
Packets/case	12

TYPE PACKAGING:

Packed in two rectangular cans (Part 1 and Part 2).

COMMENTS:

Components were selected by the Strategic Air Command, which believed that highly concentrated foods were needed in evacuation situations peculiar to long range aircraft. These components, however, were not well accepted by SAC personnel. Despite the nomenclature of this food packet, its concept of use (entailing operational activity without resupply or water limitation) had more in common with that of the LRP than that of survival. For survival situations, it has been replaced by the Food Packet, Survival, General Purpose.

FOOD PACKET, SURVIVAL, ABANDON AIRCRAFT

MENU (MIL-F-35055B):

	Number of Units	
	Part 1	Part 2
Meat Bar	2	3
Cereal Block	2	—
Fruitcake Bar	3	—
Instant Coffee	4	—
Instant Tea	2	—
Sugar Tablets	7	—
Dehydrated Onions	2	—
Chili Powder Seasoning	1	—
Recipe Sheet	1	—
Can Opener	—	1 (taped to bottom)

One information sheet, noting that the food packet had two parts (cans), was provided per case of 12 packets.

RATION SUPPLEMENTS

Current

Ration Supplement, Aid Station

Ration Supplement, Sundries Pack

Ration Supplement, Beverage Pack

Historical

Ration Supplement, Spice Pack, Kitchen

Ration Supplement, Hospital

RATION SUPPLEMENT, AID STATION

ABBREVIATION: Aid Station Beverage Pack

DATE AVAILABLE FOR TROOP ISSUE: 1945

NSN: 8970-00-128-6404

SPECIFICATION: MIL-R-1041

DESIGNED FOR:

Use at forward aid stations to provide drinks to casualties being evacuated. It includes hot, stimulating beverages — coffee, tea, and a high caloric flavored milk product.

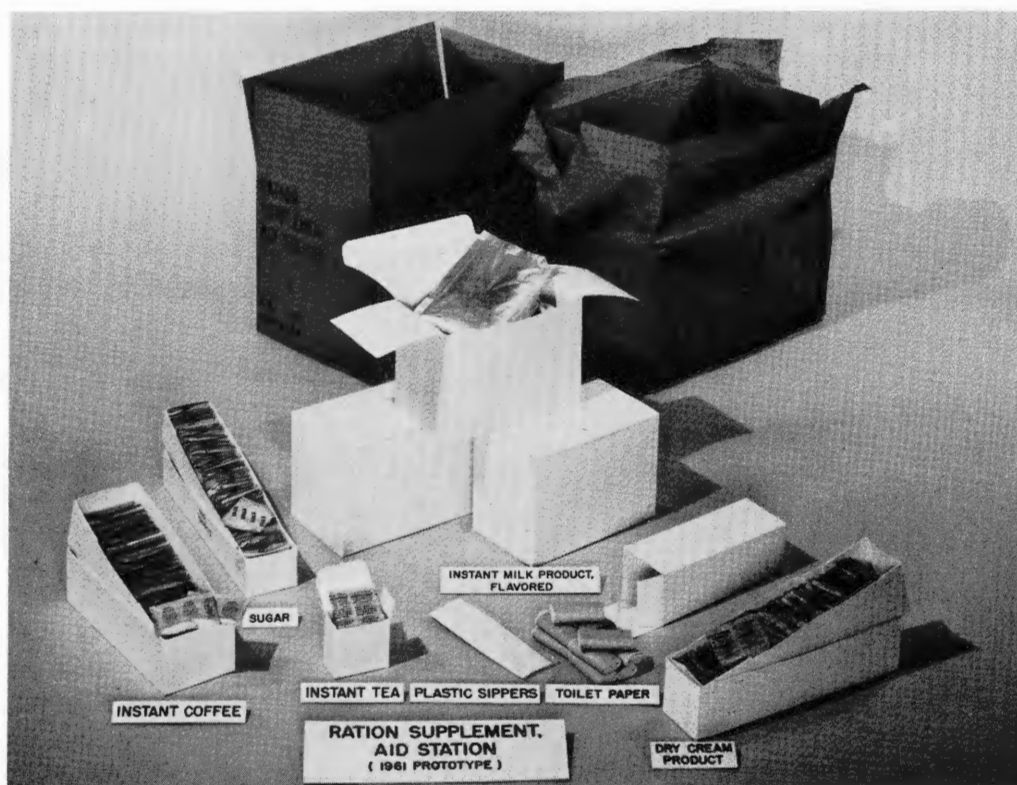
USED BY: Army for personnel receiving emergency treatment at aid and collecting stations.

RATION/MEAL CONSISTS OF:

Types of components: Instant coffee, tea, dry flavored milk product, sugar, cream, plastic sippers, and toilet paper.

Special nutrients:

The flavored dry milk product was developed at the request of the Army Surgeon General's Office for a "protein-beverage concentrate" for use as a therapeutic food to be prescribed for and administered to battle casualties by a doctor.



RATION SUPPLEMENT, AID STATION

PRESENT STATUS: Item is not stocked; minimum order to DPSC for direct vendor delivery is 33,000 boxes.

REQUIREMENTS FOR PREPARATION:

Water: Preparation requires only the addition of water (hot or cold) 25 quarts for 100, 8-ounce servings.

Equipment: For heating water.

ADVANTAGES:

Lightweight; easy to handle and carry. Stable at temperature extremes.

DISADVANTAGES:

Not depot stocked; lead time required for procurement.

MEAL/RATION CHARACTERISTICS:

Weight/case 16 pounds

Cube/case 1.01 cubic feet

TYPE PACKAGING:

Flexibly packaged components (envelopes) are placed into an intermediate corrugated fiberboard box which is placed into a waterproof case liner, which is sealed and packed into a V2s shipping container.



RATION SUPPLEMENT, AID STATION

COMMENTS:

The pack (16 pounds) is light enough for hand transport under combat conditions.

The supplement has been revised in accordance with requirements received from The Surgeon General of the Army. Item is not stocked because of the large quantity required for a minimum order.

MENU (MIL-R-1041D):

The supplement provides 100 eight-ounce instant beverages and includes the following components:

	No. of Units
Coffee	60
Tea	10
Toilet paper	10
Sugar	70
Chocolate—Coffee Flavored	30
Dairy Drink, Dry	
Cream Substitute	70
Plastic Sippers (Bent)	1

RATION SUPPLEMENT, SUNDRIES PACK

ABBREVIATION: Sundries Pack

DATE AVAILABLE FOR TROOP ISSUE: 1943

NSN: 89700-00-268-9934

SPECIFICATION: P. DES 285A (Packaging and assembly only; see "COMMENTS")

DESIGNED FOR:

Issue to personnel of the Armed Forces as a supplement when Exchange Service and Ships Store Service are not available to provide items such as tobacco, soap, toilet articles, confections, and stationery.

One ration supplement (one case) is designed for one day's supply of specified accessory items for 100 men.

Basis of issue: 1 pack/100 men/day

USED BY: Army and Marine Corps

RATION/MEAL CONSISTS OF:

Types of components: Commercial health and comfort items authorized for gratuitous issue under conditions precluding individuals from obtaining these items from Exchange facilities (AR 700-23).



1969 PROTOTYPE

RATION SUPPLEMENT, SUNDRIES PACK

COMMENTS:

This item is not intended for depot stockage. Components are commercial health and comfort items which have been selected by HQDA, generally in conjunction with HQ, USMC. They have usually been depot-assembled (rather than centrally procured assembly under a contract citing P. DES 285A). As AR 700-23, Supply of Hygienic and Comfort Items, has recently been revised to include items specific to female personnel, it is anticipated that HQDA will request updating of the purchase description to provide instructions for a second supplement.

RATION SUPPLEMENT, SUNDRIES PACK

PRESENT STATUS:

Item is not stocked. Minimum order to DPSC for direct vendor delivery is 6,500 boxes (see "COMMENTS").

SPECIAL CRITERIA: Not applicable. Authorized components are selected by brand name, based on Army/Air Force Exchange sales.

COST: \$32.00/box (1 April 1981)
Minimum order — 6500 boxes (see "COMMENTS")

SHELF LIFE (various conditions):

Limited; components are commercial items and are not intended for stockage.

SUSCEPTIBLE TO/DAMAGED BY:

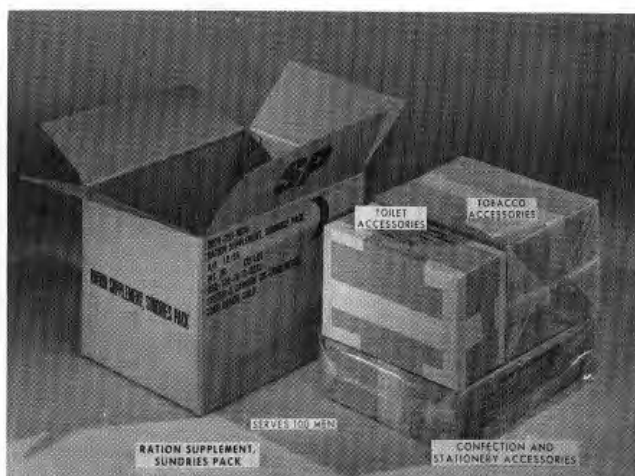
Not established; however, the packaging and assembly requirements of P. DES 285A were designed to protect the contents from the assembly to the issue points.

MEAL/RATION CHARACTERISTICS (if assembled in accordance with P. DES 285A):

Weight/case	41 pounds
Cube/case	1.67 cubic feet

TYPE PACKAGING:

Components in commercial packages were consolidated in three packs (tobacco, toilet articles, and confections and stationery), each in a fiberboard (B-flute) container. The tobacco and confections and stationery packs were then placed in a laminated or polyethylene wrap and sealed. The three packs were packed in a fiberboard (V2s) shipping container.



RATION SUPPLEMENT, SUNDRIES PACK

COMPONENTS (P. DES 285A):

Tobacco Pack

- Cigarettes — assorted brands (100 pkgs)
- Cigars — tipped and regular (1 pkg ea)
- Tobacco, chewing (1 pkg)
- Tobacco, pipe, smoking (1 pkg)
- Matches, safety, book, humidity resistant (50 books, 1 ctn)
- Flints, lighter (2 pkgs)
- Cleaners, pipe (5 pkgs)

Toilet Articles

- Cream, shaving, pressurized can (4 cans)
- Razor, safety, double edge (2)
- Blades, razor, safety, double edge, ss., individually wrapped 8 pkts,
5 blades or 4 pkts of 10 blades
- Toothpaste (4 tubes)
- Toothbrush (4)
- Soap, toilet, deodorant type (20 bars)

Confection and Stationery Pack

- Candy, hard, fruit tablets (20 rolls)
- Chocolate, discs, candy coated (48 each)
- Candy assorted (caramel types) (48 each)
- Gum, chewing, assorted flavors, candy coated (25 pkts — 2 tablets)
- Pens, ball point, nonmetallic clip (8 ea)
- Envelopes, air mail, self-sealing (8 pkts — 15 ea)
- Paper, writing (8 tablets — 20—25 sheets ea)
- Sewing kits (3 kits)
- Laces, nylon, round (6 pairs)

RATION SUPPLEMENT, BEVERAGE PACK

DATE AVAILABLE FOR TROOP ISSUE: 1967

NSN: 8970-01-108-2858

SPECIFICATION: MIL-R-43650

DESIGNED FOR:

Personnel subsisting on the Individual Combat Meal and the Food Packet, Long Range Patrol in hot climates. This supplement was developed in response to a request from USARV for individual serving packages of fruit flavored beverage base powders and tea for issue in conjunction with the MCI and LRP. The beverages were reportedly needed to overcome the unfamiliar taste of drinking water which had been treated with water purification tablets. Provision of the beverage bases as a supplement, rather than as MCI or LRP components, retained the suitability of these rations for global issue, in environments where fruit flavored beverages and tea would not have been equally welcome. Each pack provides beverage supplementation for 100 individuals; two packs are provided in each shipping case.

USED BY: Only by personnel subsisting on individually packaged rations (see "COMMENTS").

RATION/MEAL CONSISTS OF:

Types of foods: Supplemental beverages (fruit flavored beverage powders, tea, and sugar). Each pack included individual servings of five different flavors of fortified fruit beverage base powders, instant tea, with individual sugar packets, and instant lemon flavored tea with sugar.

Special nutrients: Fortification of beverage base powders with ascorbic acid.



RATION SUPPLEMENT, BEVERAGE PACK

PRESENT STATUS:

Procurement authorization was withdrawn and the specification cancelled in 1977. As the result of action by the Army, the specification was reactivated as of 29 June 1981. Reactivation of procurement authorization was agreed upon at the July 1981 meeting of the Armed Forces Product Evaluation Committee, DoD Food Planning Board.

PREPARED BY: Individual consumers.

REQUIREMENTS FOR PREPARATION:

Water (including amount): For beverages — 12 fluid ounces per individual serving of beverage base and tea with lemon and sugar; eight fluid ounces per individual serving of instant tea. (Total requirement, if items were centrally prepared rather than issued to individuals, would be slightly over 9.8 gallons per pack or slightly less than 19.7 gallons per shipping case.)

Equipment: To heat water for tea desirable.

ADVANTAGES:

Provides a means of logistically simple response to an apparent environmental specific requirement without altering global suitability of items being supplemented.

DISADVANTAGES:

Individual serving packages of presweetened, fortified beverage bases are not readily available commercially and may thus entail problems without recurring procurement.

SHELF LIFE: Not determined.

MEAL/RATION CHARACTERISTICS:

Weight/case	21.5 pounds (2 packs)
Cube/case	0.9 cubic feet (2 packs)
Packs/case	2

TYPE PACKAGING:

Each pack consists of a fiberboard (B-flute board) box holding two paperboard boxes of beverage base envelopes (each paperboard box providing 45 envelopes, nine each of five different flavors) and a sealed polyethylene bag containing 15 envelopes each of instant tea and sugar and five envelopes of lemon flavored tea with sugar. Two packs are packed per fiberboard (V2s) shipping case.

RATION SUPPLEMENT, BEVERAGE PACK



1968 DATE OF PACK

COMMENTS:

This ration supplement was procured twice during the Vietnam War. Information from users indicated that it was never issued in conjunction with individually packaged rations, but rather issued to and used by dining facilities, where the multiplicity of individual packages was neither understood nor appreciated. This experience made clear that implementing instructions to food service personnel were needed for proper distribution and use of this item.

MENU (MIL-R-43650 and Amend 1):

Each Ration Supplement, Beverage Pack provides beverages for 100 individuals:

- 90 envelopes of fruit flavored beverage bases (18 each orange, lime, grape and cherry)
- 15 envelopes of sugar
- 15 envelopes of instant tea
- 5 envelopes of lemon flavored instant tea

RATION SUPPLEMENT, SPICE PACK, KITCHEN

ABBREVIATION: Kitchen Spice Pack

DATE AVAILABLE FOR TROOP ISSUE: 1945

FSN: 56-S-28500

SPECIFICATION: MIL-R-1498

DESIGNED FOR:

Provision of a pre-assembled assortment of spices, leavening agents, condiments, and miscellaneous items in quantities sufficient to supplement 1000 rations in order to simplify the problems of distribution, breakdown and issue encountered in obtaining a balanced B Ration in the field.

RATION/MEAL CONSISTS OF:

Types of foods: Spices, leavening agents, condiments, and flavorings.

PRESENT STATUS: Obsolete. Specification cancelled.

PREPARED BY: Trained food service personnel, using B Ration recipes and equipment.

REQUIREMENTS FOR PREPARATION:

Water: Dependent upon recipe.

Equipment: Field cooking equipment.

ADVANTAGES:

Simplified distribution and issue of miscellaneous B Ration components to forward areas.

DISADVANTAGES:

Components and quantities never jibed perfectly with those desired at any specific using unit. Nonavailability of some specified components impaired usefulness. Nonavailability of hermetically sealed cans for some components resulted in unit package breakage, sifting of powdery items, and flavor transfer within the pack.

RATION SUPPLEMENT, SPICE PACK, KITCHEN

SPECIAL CRITERIA:

Design constraints: Components and amounts of the World War II supplement were based initially on Expeditionary Forces Menu No. 1 for 100 men for 10 days.

SHELF LIFE: Varied with the components and their packages.

SUSCEPTIBLE TO/DAMAGED BY:

Not established. Items procured in domestic unit packages were subject to breakage and flavor transfer within the shipping case.

MEAL/RATION CHARACTERISTICS (World War II; see "COMMENTS"):

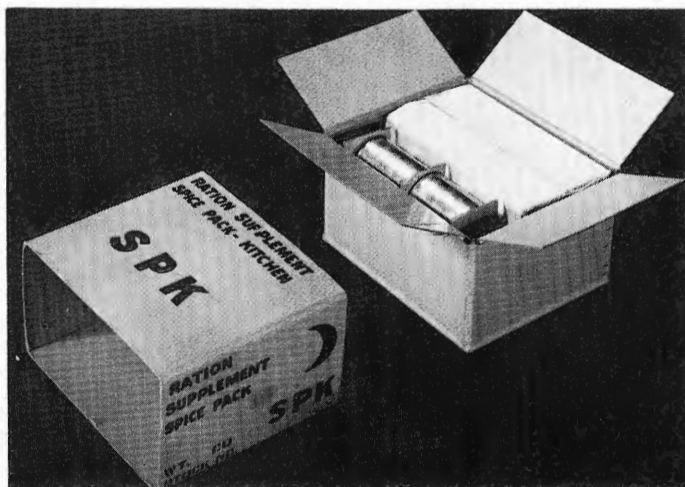
Weight/case	40 pounds
Cube/case	1.2 cubic feet

TYPE PACKAGING:

Standard domestic packages (cartons, composite fiber cans, and metal cans were used for the components, with the additional protection afforded by the overall pack: a corrugated fiberboard case overpacked in an X-crepe bag and placed in a wood box.

COMMENTS:

Procurement of this supplement ended with the close of World War II. Developmental work continued to update and optimize component selection, quantity and packaging, resulting in a new supplement having a gross weight of 20 pounds and volume of 0.8 cubic feet per pack. Although the specification was revised to support anticipated procurement during the Korean War, it was not used. Instead, a pack providing spices for 100 rations for 15 days, having a gross weight of 59 pounds, was assembled in Japan.



EARLY VERSION

RATION SUPPLEMENT, SPICE PACK, KITCHEN

MENU: Components are outlined below:

MIL-R-1498 (QMC Tentative Spec CQD 354):

MIL-R-1498A:

Product	No of Units	Product	No. of Units
Baking Powder	8 (16 oz each)		
Baking Soda	1 (16 oz)	Soda, Baking	1 (1 lb)
Bouillon Cubes	3 (90-100 cubes each)		
Celery Salt	1 (6 oz)		
Chili Powder, spiced	1 (4 oz)		
Cinnamon, Ground	2 (4 oz each)	Cinnamon (Cassia)	1 (4 oz)
Cloves, Ground	1 (1-1/4 oz)		
Cornstarch	2 (16 oz)		
Garlic Salt	1 (6 oz)		
Gravy and Table Sauce Base	2 (4 oz each)	Soup and Gravy Base	3 (1 lb each)
Lemon Powder, Synthetic	1 (12 oz)		
Maple Tablets	1 (48 tablets)	Flavoring, Imitation, Maple Tablets	1 (48 tablets)
Mustard Mix	4 (4 oz each)		
Nutmeg, Ground	1 (4 oz)	Nutmeg, Ground	1 (1-1/2 oz)
Paprika	1 (1 oz)	Pepper, Paprika	1 (1-3/4 oz)
Pepper, Black	6 (4 oz each)	Pepper, Black Ground	1 (1 lb)
Sage, Ground	1 (1 oz)		
Vanilla Tablets	1 (64 tablets)	Flavoring, Imitation, Vanilla Tablets	3 (64 tablets each)
Yeast, Active Dry	2 (6 oz each)	Sugar, Powdered (Confectioners)	6 (1 lb each)

RATION SUPPLEMENT, HOSPITAL

ABBREVIATION: Hospital Supplement

DATE AVAILABLE FOR TROOP ISSUE: 1944

FSN: 56-R-10650

SPECIFICATION: MIL-R-1500

DESIGNED FOR:

Use in field hospitals, to provide 25 servings of soft and liquid foods to supplement other subsistence available to patients in World War II field hospitals.

USED BY: Patients in field hospitals (other than aid stations).

RATION/MEAL CONSISTS OF:

Types of components: Canned fruits, canned citrus fruit juices, canned dehydrated soup, vacuum-packed roasted and ground coffee, granulated sugar, evaporated milk, and a can opener. Soluble coffee and powdered milk subsequently replaced their initial counterparts, and cocoa beverage powder, compressed cereal, malted milk tablets, tea, tomato juice, toilet paper, plastic sippers, and paper towels were added.

PRESENT STATUS:

Obsolete; in effect replaced by Standard B Hospital Ration for the Armed Forces.

PREPARED BY:

REQUIREMENTS FOR PREPARATION:

Water: Water required for preparation.

Equipment: Heating may be accomplished by the use of the usual field cooking equipment.

RATION SUPPLEMENT, HOSPITAL

ADVANTAGES:

This item filled a need during World War II, when bulk-supplied B Ration items and other subsistence available to field hospitals were not fully compatible with patient needs.

SPECIAL CRITERIA: Not defined at the time of use.

SHELF LIFE: Not established.

MEAL/RATION CHARACTERISTICS:

Weight/case	50 pounds (including packaging)
Cube/case	1.4 cubic feet

COMMENTS:

Although developmental work was performed on this supplement and a small quantity procured for use in the Korean War, no information on its use could be obtained. At that time suitable items were already authorized as B Ration items and Hospital Supplement items in SB 10-495. Definition of the concept of use showed that the need could be met without a special supplement pack, and the specification was cancelled early in 1954.

RATION SUPPLEMENT, HOSPITAL

MENUS:

MIL-R-1500 Conversion of QMC Tentative Spec
CQD 148A:

MIL-R-1500A:

Product	No. of Units	No. of Units*
Compressed Cereal	3 (10 oz each)	Same — included in dry pack
Citrus Juices	1 (46 oz)	Same
Cocoa Beverage Powder	2 (16 oz each)	3 (10 oz ea) included in dry pack
Soluble Coffee Product	2 (4 oz each)	Same
Canned Fruit	1 (6 lb)	4
Malted Milk Tablets	1 (14 oz)	Same
Powdered Whole Milk	5 (16 oz each)	4
Soup, Condensed	7 (10-1/2 oz each)	Cream of Pea Soup (10-1/2 fl oz) (2) Cream of Tomato Soup 2 (10-1/2 fl oz) Beef & Vegetable Soup 2 (10-1/2 fl oz)
Sugar, Granulated	1 (3 lb 14 oz)	2 (2 lb each) — included in dry pack
Tea	2 (10 pkts each)	Same
Tomato Juice, Canned	1 (46 oz)	Same
Can Opener, Pocket Style	2	Not included
Toilet Paper	1 (125 sheets)	Same — included in dry pack
Sippers, Plastic	1 (3 sippers)	Same — included in dry pack
Towels, Paper	1 (20 sheets)	1 (25 sheets) included in dry pack
Bouillon	Not included	1 (16 oz)

*As set forth in QMC Purchase Description 19 July 1950 and used for actual procurement. Minor changes were made in the subsequently cancelled document, such as replacement of soluble coffee product with pure soluble coffee.

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